MARCH 6, 1961

PAPER TRADE JOURNAL

Paper Week — The 84th Time

. . . highlighting APPA, TAPPI, APA, NCSI and over 15 other group's conclaves . . . WPMA's 100th . . . special emphasis on exports, foreign markets . . . and this extra report . . .

Sorg Unveils The Advantages Of Multi-Rotoformer Wet End

Editorial Dept.
University Microfilms, Inc.
313 N. First St.
Ann Arbor, Mich.

GOTTESMAN-CENTRAL NATIONAL ORGANIZATION · 1886-1961 · 75 YEARS

Celebrating 75 Years of Service to the World's Pulp and Paper Industry

GOTTESMAN-CENTRAL NATIONAL ORGANIZATION

100 Park Avenue, New York 17, N.Y. • Gottesman & Company, Inc. • Central National Corp.
Central National Commercial Co., Inc. • Gottesman & Company Akt., Stockholm
Central National-Gottesman Ltd., London • Representatives in 75 World Markets

A SKILLED HAND IN CHEMISTRY . . . AT WORK FOR YOU

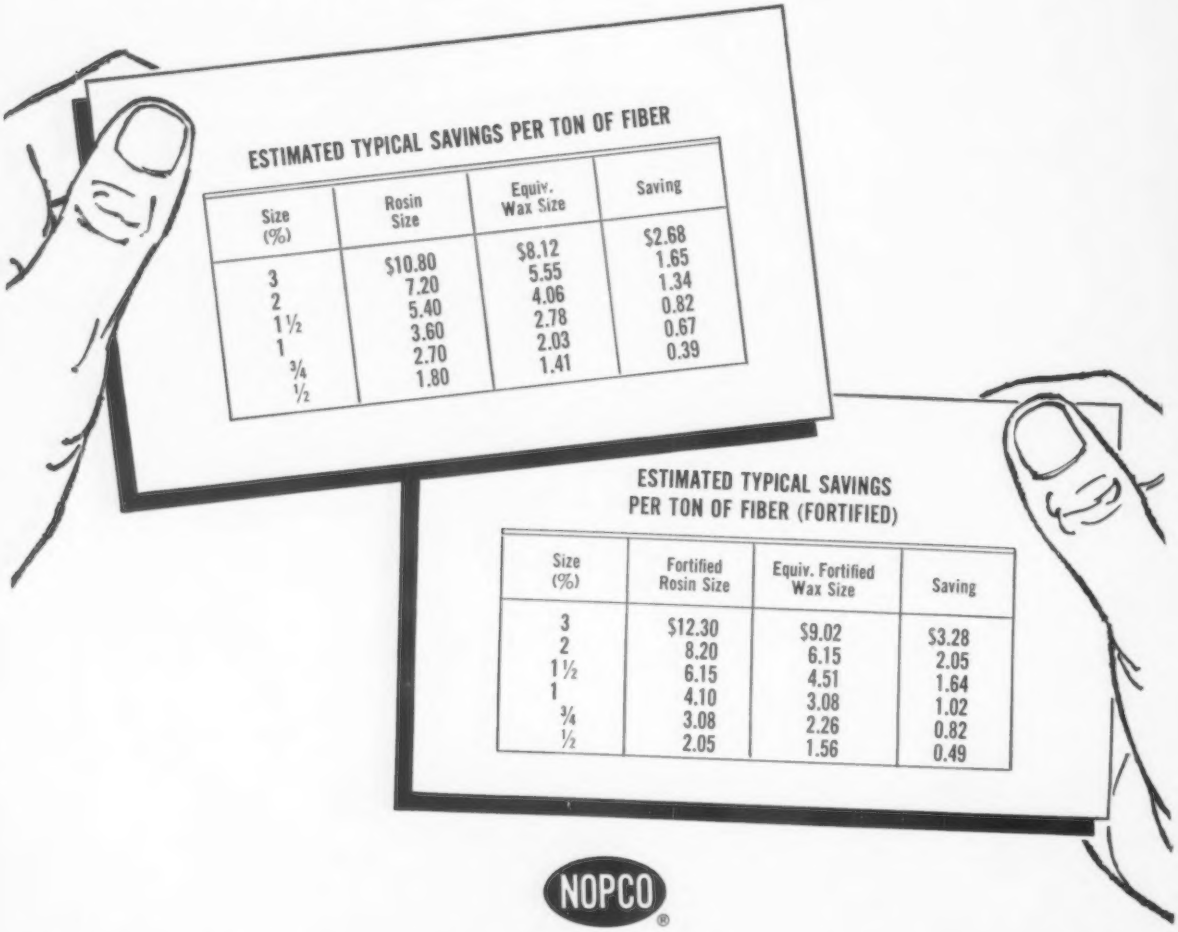
Are your rosin size costs too high?

Nopco® Wax Sizes do more—cost less

Whether your mill uses rosin or fortified-rosin sizes, Nopco can show you how to reduce your sizing costs by using its wax sizes. In addition to saving you money, Nopco Wax Sizes impart improved resistance toward water, ink, lactic acid, alkalis and blood; improve gloss, smoothness and printability; and decreases fuzz, curl and brittleness.

Use of Nopco Wax Sizes in your mill is an advantage you cannot afford to overlook. Let us help you set up a program of tests and trial runs to prove it to your own satisfaction.

Our Technical Service Engineers, utilizing over 30 years' experience with wax sizes, are ready to show you the advantages to be gained by the use of wax sizes in conjunction with rosin sizes. Write today for further information.


ESTIMATED TYPICAL SAVINGS PER TON OF FIBER
Size (%) | Rosin Size | Equiv. Wax Size | Saving
3 | $10.80 | $8.12 | $2.68
2 | 7.20 | 5.55 | 1.65
1½ | 5.40 | 4.06 | 1.34
1 | 3.60 | 2.78 | 0.82
¾ | 2.70 | 2.03 | 0.67
½ | 1.80 | 1.41 | 0.39
ESTIMATED TYPICAL SAVINGS PER TON OF FIBER (FORTIFIED)
Size (%) | Fortified Rosin Size | Equiv. Fortified Wax Size | Saving
3 | $12.30 | $9.02 | $3.28
2 | 8.20 | 6.15 | 2.05
1½ | 6.15 | 4.51 | 1.64
1 | 4.10 | 3.08 | 1.02
¾ | 3.08 | 2.26 | 0.82
½ | 2.05 | 1.56 | 0.49

NOPCO®

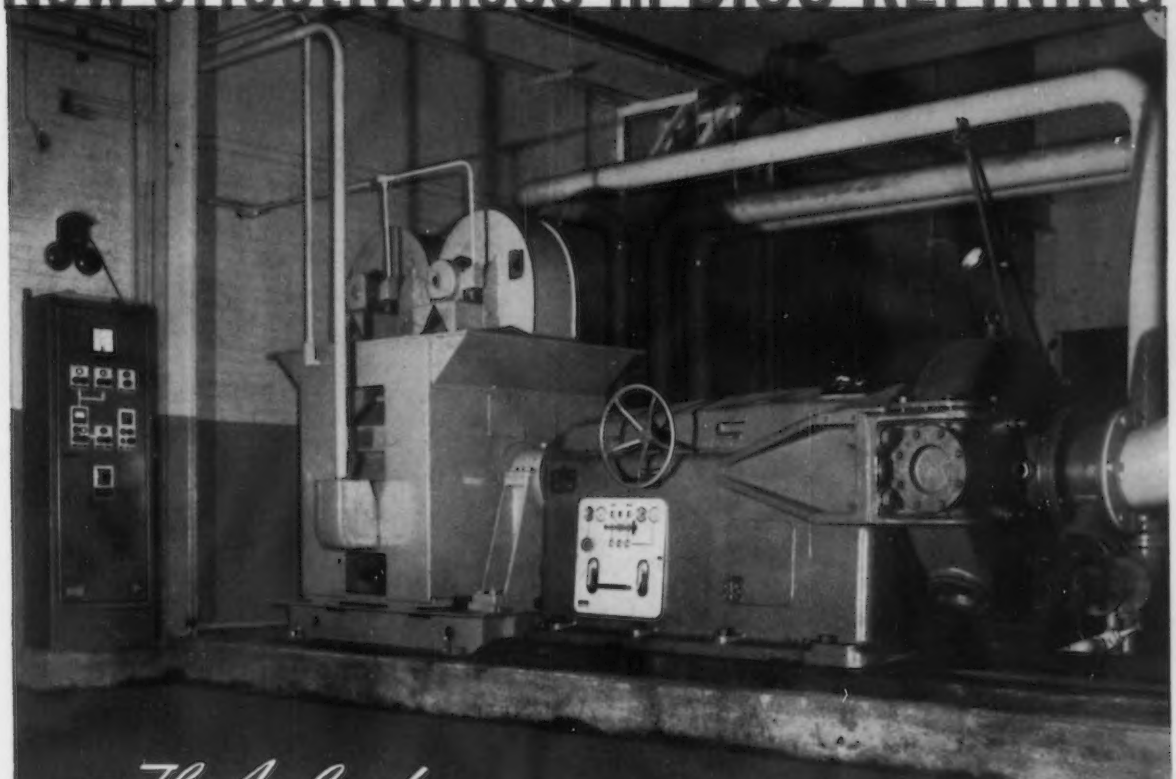
NOPCO CHEMICAL COMPANY

60 Park Place, Newark, New Jersey

Plants: Harrison, N.J. • Carlstadt, N.J. • Richmond, Calif. • Cedartown, Ga. • London, Canada • Mexico, D.F. • Corbeil, France

Manufacturing Licensees Throughout the World

New effectiveness in DISC REFINING



In a mid-western mill on semi-chemical furnish

The Asplund

RAFFINATOR

NORTH AMERICAN MILLS are discovering advantages present only in the Raffinator Disc Refiner for getting highest strength development in all kinds of pulp at consistencies up to 20%.

For example, the Raffinator's exclusive hydraulic control system provides absolute uniformity of clearance between the plates at all points. The rotating disc is positioned with positive, constant control — can be operated at a fixed clearance or on a floating principle to accommodate varying stock pressures. Through a clearance indicator, screen plate settings are conveniently seen magnified 80 times.

Split shell facilitates setting the rotor and static discs in perfect alignment at tolerance of .0001″ or less. Oversize shaft prevents deflection.

Rugged, dependable and efficient, the Raffinator comes complete with electrical system, control panel and automatic safety devices. All parts exposed to stock are made of stainless steel.

Currently proving its effectiveness in over 600 European installations, this high precision disc refiner, an Asplund invention, is engineered and manufactured in Sweden by Aktiebolaget Defibrator. It is now made available to North American mills by Bolton-Emerson.

Get all the facts about the Raffinator Disc Refiner from The Emerson Manufacturing Co., Division of John W. Bolton & Sons, Lawrence, Massachusetts.

BOLTON EMERSON
TRADE MARK

PAPER TRADE JOURNAL

PUBLISHED WEEKLY SINCE 1872

Week of March 6, 1961
Vol. 145, No. 10

JOHN C. W. EVANS
Editor

PAUL D. VAN DERVEER
Associate Editor

R. E. THUEMMES
Associate Editor

HARRY L. DYER
Assistant Editor

ERNEST F. BARKER
European Editor

L. HAMEL
Production Editor

WM. N. PERRY
Staff Artist

LOCKWOOD TRADE JOURNAL CO., INC.
49 West 45th Street, New York 36
Cable: Lockmin

GEORGE E. LOCKWOOD.....President and Treasurer
ARTHUR E. GORDON.....Vice President
FREDERICK E. WINKLER.....Secretary

Published by Lockwood Trade Journal Co., Inc., at 34 N. Crystal St., East Stroudsburg, Pa. Second class postage paid at East Stroudsburg, Pa. Printed in U.S.A. Copyright 1961 by Lockwood Trade Journal Co., Inc. Paper established Feb. 17, 1900, combined with Paper Trade Journal Nov. 16, 1899. Paper established Sept. 21, 1910, combined with Paper Trade Journal February 19, 1926. All rights to above titles reserved.

FEATURED THIS WEEK

Export Potential, Marketing Aims and Fiscal Improvement 30

The Export Situation in Pulp—L. P. Turcotte 31

Researching Foreign Markets—Carl E. Noble 32

An Outsider Looking In—Lawrence K. Gessner 33

Pulpwood Production Developments at Home and Abroad Dissected at APA 34

Unbleached Kraft Paper Review—1960 Follows Cycle —J. B. Cowie 35

Significant Developments at TAPPI'S Annual Meeting 36

New Multi-Unit Rotoformer Installation Unveiled at Sorg

Do these units make conventional vats obsolete? This progressive firm has replaced five normal vats with three Rotoformers. Performance has been good with several important operating advantages. 42

SUBSCRIPTIONS →

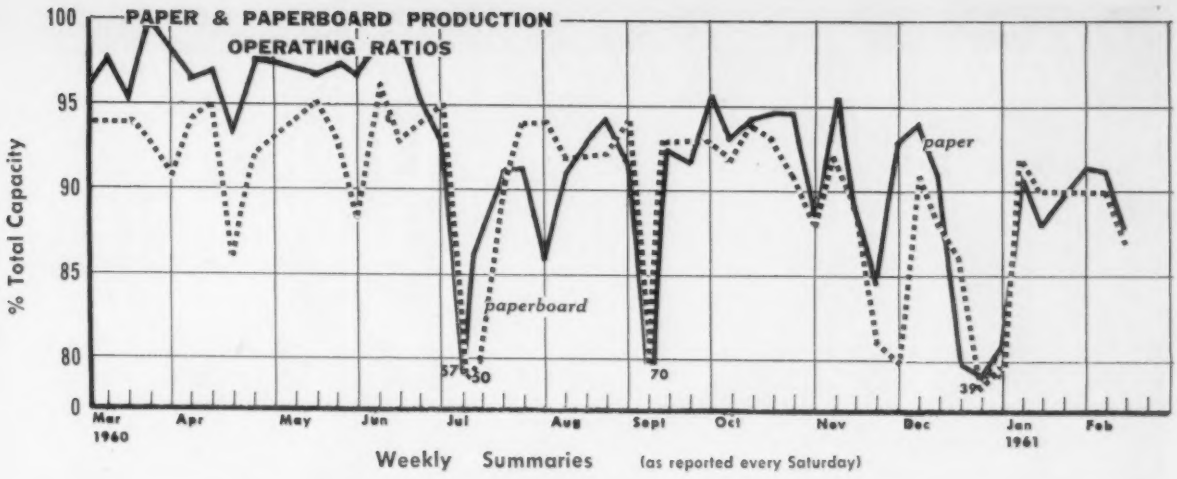
Mills, Converters and Personnel	1 yr.	2 yrs.	3 yrs.
U.S., Canada, Mexico	$5.00	$8.00	$10.00
Companies or persons not manufacturing or converting paper and pulp, U.S., Canada, Mexico	Per year: $7.50		
Latin American Countries	15.00	25.00	30.00
All Other Countries	20.00	30.00	40.00
United Kingdom Representative: J. B. Transart Ltd., 168A, Greenford Rd., Harrow, Middlesex, England	£7	£10/10	£14

Single copy price of current issue:
North America 50c Foreign $1.00
R. E. BOETSCH Director of Circulation

PAPER TRADE JOURNAL—49 W. 45th St., N.Y. 36, N.Y.
Please enter a subscription with the mailing address as follows:

Name .....
Address .....
City ..... Zone ..... State .....

If subscription is for an individual, please fill in:
Employer ..... City ..... State .....
Position ..... Employer's Business .....
Amount $..... ☐ Bill Me ☐ Bill Company ☐ Check Enclosed



NEWS OF THE WEEK

IP Forms Overseas Division . . . Scott to Take Over Subsidiaries . . . New Management Team Named for New York and Pennsylvania 19

Writing Paper Ass'n Celebrates Hundredth Anniversary . . . Glassine and Greaseproof Elects New Officers . . . Tissue Ass'n New President is L. R. Watson . . . Syracuse Alumni 21

Sonoco Directors Elect C. W. Coker President . . . Mosinee Fills Newly Created Vice Presidencies . . . Brownsville Paper Elects Officers . . . KVP Sutherland Names Market Research Manager 22

Container Corp. Establishing Houston Plant . . . Morse Joins Alton Box as Assistant to President . . . Diem & Wing Announces Management Changes . . . Johnsen Again Heads Business Forms Institute 26

Trends *19*

News of the Industry *21*

News Highlights of Paper Week *22*

Paper People *26*

News of Converters *29*

New Equipment & Supplies *45*

Figures of the Week *50*

Obituaries *50*

Prices of Fibers *52*

New Literature *55*

News of Suppliers *58*

Classified Advertising *61*

Advertisers Index *66*

REMEMBER THESE DATES

National Paper Trade Ass'n Annual Convention, Waldorf-Astoria Hotel, New York — MARCH 26-29

Technical Ass'n of the Pulp and Paper Industry, 12th Annual Coating Conference, Statler-Hilton, Buffalo, N. Y. — MAY 22-24

Whatever your coating requirements...

EGAN PROVIDES THE COMPLETE PACKAGE!

UNROLLS
Single and Double
Flying Splice (semi-automatic)
Turrets (handsplice or automatic)

COATERS
Reverse Roll (3 or 4 roll units)
Air Knife
Knife
Gravure (direct or offset)
Various Roll Types

LAMINATORS
Two Web
Multiple Web

EXTRUSION COATERS and LAMINATORS
Laboratory or Pilot Plant
Production Units

TREATERS

GUMMERS

SATURATORS

EMBOSSERS

HIGH VELOCITY OR CONVENTIONAL DRYING SYSTEMS
Horizontal, Arched, Vertical
Steam Heated, Gas or Oil
(direct or indirect)

GUIDES

PULL ROLLS

WINDERS
Fixed Center (single or double)
Single Surface (Pope reel)
Double Drum (standard or flying transfer)
Turret (handsplice or automatic)

Egan

FRANK W. EGAN & COMPANY
SOMERVILLE, NEW JERSEY
CABLE ADDRESS: EGANCO—SOMERVILLE, NJER

MANUFACTURERS OF PROCESSING MACHINERY FOR PAPER, FILM & FOIL, AIR DRYING SYSTEMS; ROTOGRAVURE PRINTING PRESSES; PLASTICS EXTRUDERS & ACCESSORIES; TEXTILE FINISHING MACHINERY.

LICENSEES
ENGLAND—BONE BROS. LTD., Wembley
FRANCE—ACHARD-PICARD, REMY & CIE., Paris
GERMANY—ER-WE-PA, GmbH, Duesseldorf
JAPAN—MINAMI SENJU MFG. CO., LTD.
(Agent—CHUGAI BOYEKI CO.), Tokyo

REPRESENTATIVES
ITALY—ING. LEO CAMPAGNANO, Milano
MEXICO—M. H. GOTTFRIED, Mexico, D. F.

DON'T TACKLE "DUSTING" WITH A MOP use

Penford Gum

Dusting can happen at the paper mill or at the printer's. Whatever the cause, prevention is the only "cure."

The Penford Gums (hydroxy ethyl ether starch derivatives) combat dusting effectively when used as adhesives in coatings . . . as pure surface sizes applied at the press or on the calenders . . . and to hold down wiry fibers on uncoated sheets. They offer:

1. *Exceptional adhesive pigment-binding properties*
2. *Tough, flexible filming characteristics*
3. *Improved water-holding ability*

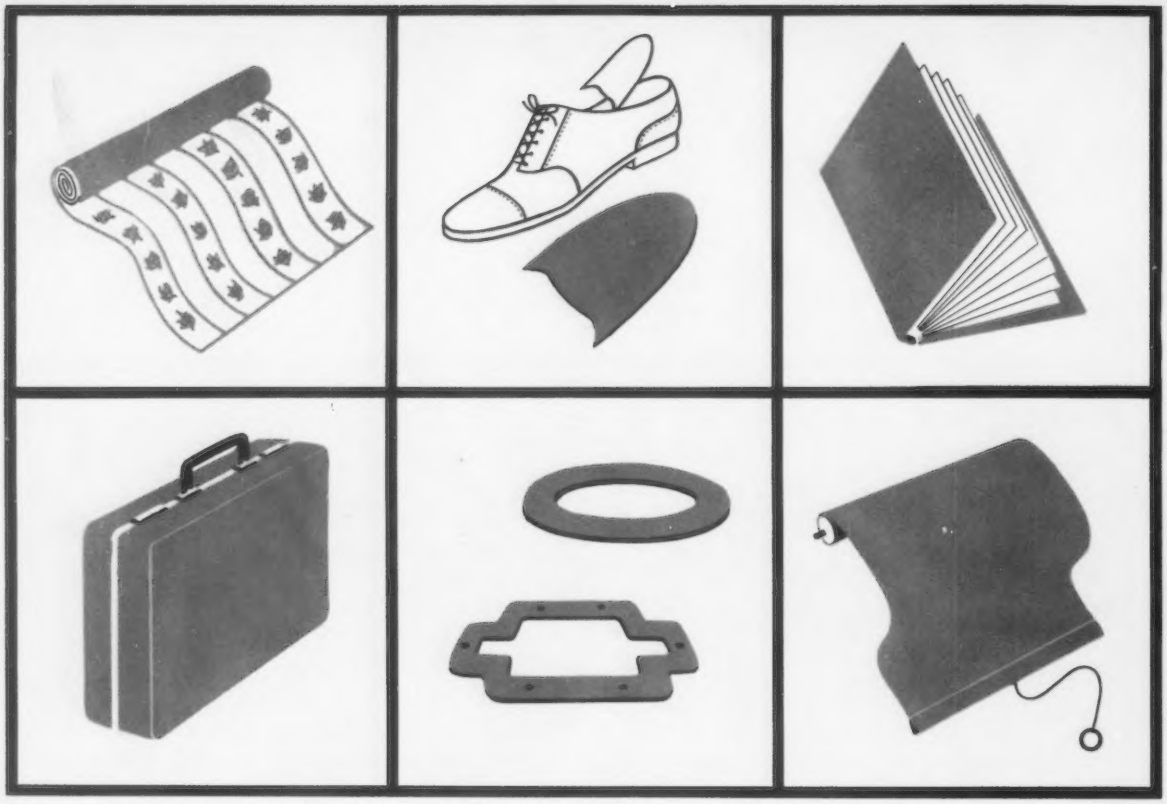
One of our technical service representatives will be glad to come to your plant to show you how Penford Gum can help you improve your paper on *all* counts without increasing costs. Call or write Penick & Ford today.

Penick & Ford

PENICK & FORD, LTD.

INCORPORATED

750 THIRD AVENUE, NEW YORK 17, N. Y.
1531 MARIETTA BLVD., ATLANTA, GA.
CEDAR RAPIDS, IOWA
18 CALIFORNIA ST., SAN FRANCISCO 11, CALIF.



Produce saturated papers or moldable forms with Rhoplex® acrylic emulsions

Leather-like papers, papers with a fabric-like feel, papers with weather-resistance, paper sheets with thermoplastic moldability—you can produce all these and many variations, by saturating paper with RHOPLEX 100%-acrylic emulsions.

A series of RHOPLEX polymer emulsions is available. The polymers range from hard, thermosetting types to soft, yielding ones. These emulsions may be used individually, or blended to produce combinations of their individual properties.

By using the appropriate polymer emulsion or combination of emulsions, properties such as the following can be imparted to paper: resistance to grease, oil, solvents and water; improved tear and tensile strength; toughness; and fold and delamination resistance. These properties are retained on aging and exposure to a wide range of conditions as well.

Possible uses for papers saturated with RHOPLEX emulsions include floor and wall coverings, shoe and heel counters and inserts, cover stock for embossing, water-resistant sandpaper backing, artificial leathers, window shade materials, gaskets, and molded panels for auto interior trim.

In addition to providing advantages in the finished product, RHOPLEX emulsions offer processors exceptional mechanical and chemical stability. They are compatible with many other latices, and can be chemically modified to produce a number of different useful effects.

Complete technical information on these versatile, useful acrylic emulsions is available on request.

Write Dept. RP-1 for a copy of this new booklet describing RHOPLEX *resins for saturation applications, beater addition, and fiber bonding.*

ROHM & HAAS

PHILADELPHIA 5, PA.

RHOPLEX

POWELL VALVES HELP MAINTAIN PRODUCT UNIFORMITY AND PROFIT

You can count on Powell Valves to overcome flow control problems where corrosion, erosion, heat or wear materially contribute to the maintenance of quality control. Performance reports prove this—year after year, in pulp and paper plants across the country.

Also, since Powell offers you an unusually wide selection of valves in stainless, nickel, Monel Metal*, Hastelloy# and Ni-resist*, your need is met easier, faster and at less cost.

On the job, you'll find Powell's good design and workmanship result in minimum maintenance that means lower operating costs too. For more information and assistance, contact your nearby Powell distributor, or write us direct.

*Registered trade name of The International Nickel Company.
#Registered trade name of Haynes Stellite Company.

150-pound Stainless Steel "Y" Valve. Outside screw rising stem and yoke. Bolted flanged bonnet. Integral seat. Available only with flanged ends. Fig. 1944 in sizes 4" through 8". End flange and face to face dimensions conform to MSS SP-42 Standard.

150-pound Stainless Steel O.S. & Y. Gate Valve Fig. 2453DG, with split wedge, in sizes 2½" through 8". Also available as Fig. 2453SG with interchangeable solid wedge in sizes 2½" through 18". Two designs: one-piece yoke, 2½" through 4" and separable yoke arms, 5" through 18".

200-pound W.O.G. Swing Check Valve, Fig. 2192. Body and bolted cap are Ni-resist. Valves through 8" have renewable Type 316 stainless steel seat ring, disc and disc holder; discs in 10" and 12" valves are Ni-resist with Type 316 stainless steel facing. Sizes, 2" through 12".

115th year of manufacturing industrial valves for the free world

POWELL PAPER MILL **VALVES**

THE WM. POWELL COMPANY CINCINNATI 22, OHIO

Reliable Source for Prime Pulps

West Virginia offers these prime woodpulps for immediate shipment:

Kraftsman Super Unbleached Sulphate • *Kraftsman Saturating Unbleached Sulphate*

With our mill at the all-weather port of Charleston, S. C., we can provide direct year-round service to most world ports.

You can depend on West Virginia for consistently high quality woodpulps, reliable service and technical assistance when desired. For full information, address one of our offices below.

WOODPULP AND EXPORT SALES DIVISION, *230 Park Avenue, New York 17, New York, U.S.A.*

Blackfriars House, 19 New Bridge Street, London, E.C. 4, England

West Virginia Pulp and Paper

improved enzyme converting starch

PEARL PLUS is a new specially treated pearl starch that is particularly designed to stabilize and fully utilize the amylose molecular fraction of cornstarch. A more stable viscosity is obtained and flow properties, filming characteristics and binding strength of the converted starch are improved. For a given viscosity a starch of less molecular degradation can be applied to paper without operational limitations.

PEARL PLUS requires appreciably less enzyme to convert to a given viscosity than regular enzyme converting starches. Converts at higher solids. Converts more rapidly, often eliminating temperature holding cycle. Standardizes quality with more consistently uniform final viscosities after conversion.

PEARL PLUS is an important new development in improving cost-quality relationships. It has been thoroughly proved in extended mill runs. We'd be pleased to discuss its advantages with you more fully.

National STARCHES

NATIONAL STARCH and CHEMICAL CORPORATION

750 Third Avenue, New York 17 • 87 Haynes Street, N.W., Atlanta • 3641 So. Washtenaw Avenue, Chicago 32 • 735 Battery Street, San Francisco 11
And All Principal Cities in the United States, Canada, England and Mexico

RCA introduces a cost-saving new

Electronic Paper Inspection System

for detecting creases, calender cuts, holes, spots and gloss imperfections

At least ten times faster than visual inspection, this new electronic equipment was developed by RCA to meet a need for automatically detecting and classifying imperfections in paper. Here is a quality control device which permits higher inspection speeds than ever before possible, with more consistent results, for maximum economy.

The surface of the paper is continuously monitored as it passes over a roller at linear speeds up to 1000 feet per minute. In this manner, creases, calender cuts, holes, spots, gloss imperfections, etc. are detected and the paper may be classified in such categories as "Accepts" and "Rejects," or "Firsts," "Seconds," and "Rejects," depending upon customer requirements.

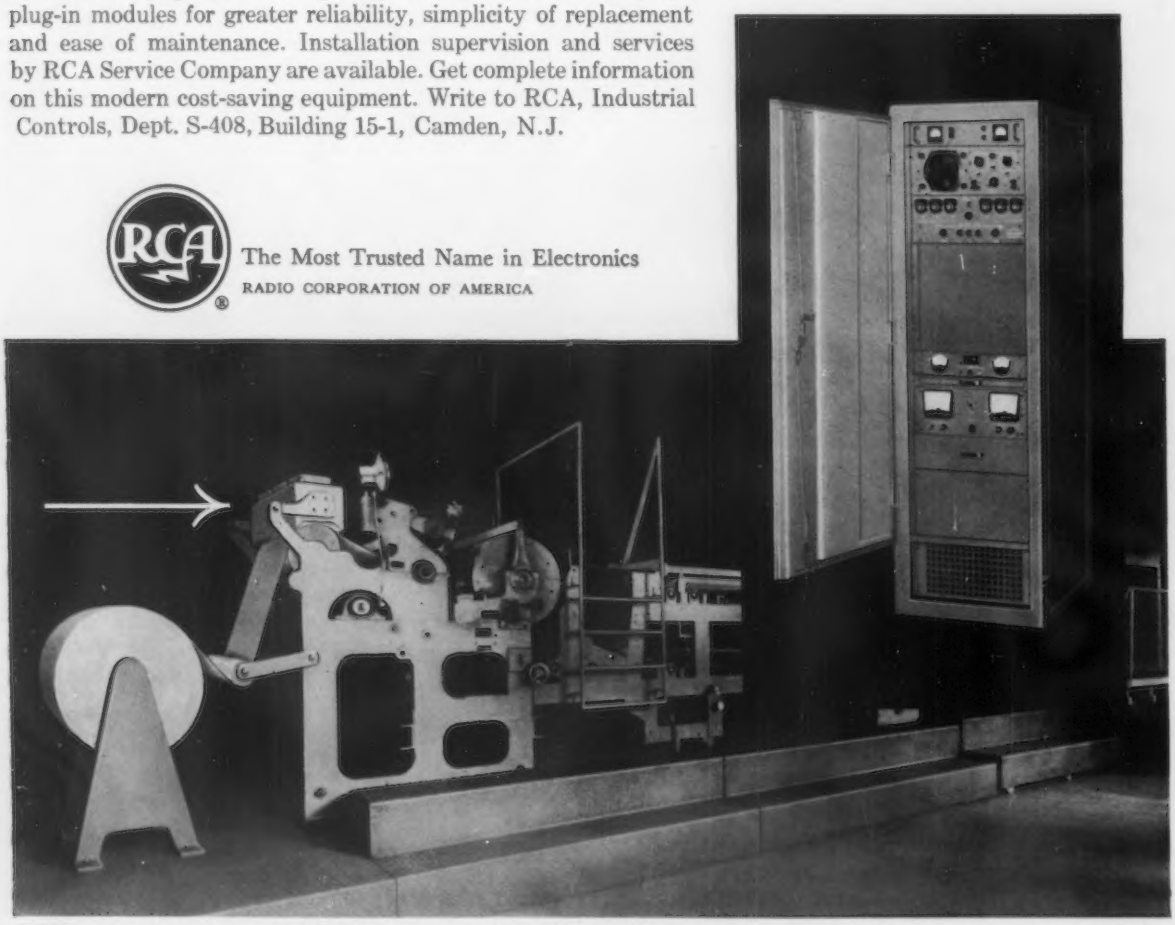
This RCA equipment is completely transistorized and employs plug-in modules for greater reliability, simplicity of replacement and ease of maintenance. Installation supervision and services by RCA Service Company are available. Get complete information on this modern cost-saving equipment. Write to RCA, Industrial Controls, Dept. S-408, Building 15-1, Camden, N.J.

- All controls mounted in one rack.
- At least 10 times faster than visual inspection —and far more consistent.
- Drift-free inspection standard.
- Only one head required for checking all types of defects.
- Non contact type inspection.
- Equipped with built-in lamp burn-out alarm system and test signal generator for checking performance of each channel at all times.

RCA

The Most Trusted Name in Electronics

RADIO CORPORATION OF AMERICA



RCA Electronic Paper Inspection System installed before the cutter, and on a Maxson Sheet Handling Apparatus. Inspection head is indicated by arrow at left, control rack is shown at right. NOTE: Only one inspection head and one control rack are needed for detecting all types of defects. Control rack can be located remotely from inspection head.

GELVA® C-3 and C-5 polyvinyl acetate resins

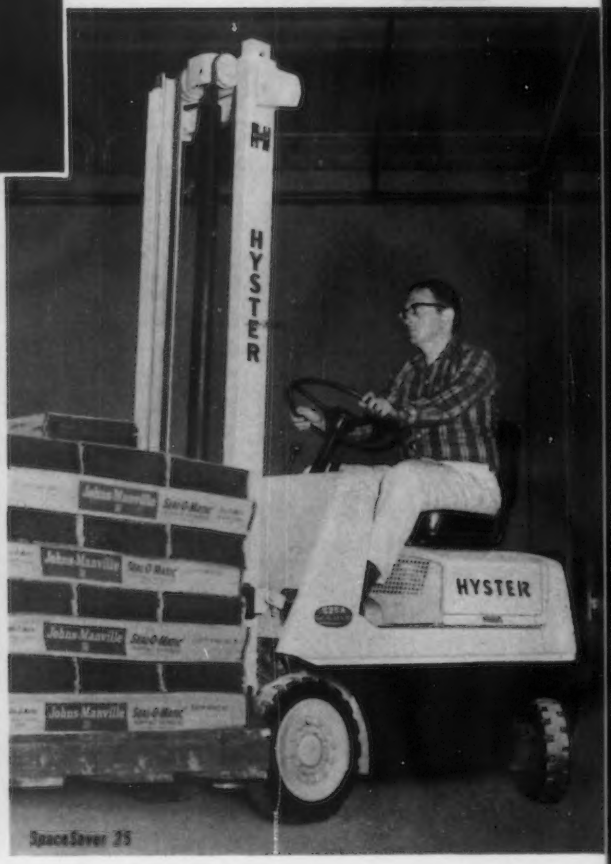
GELVA C-3 and C-5 Copolymer Resins applied from ammonia solutions provide improved wet strength, surface erasability, ink receptivity, surface gloss and grease and abrasion resistance. Add to these . . . increased Mullen, wax pick, tensile and fold strength, plus easy broke recovery, and you have the reason for the rapidly increasing use of these products by the paper industry.

Coast-to-coast warehousing, Shawinigan's large staff of research chemists who are ready to help you with your particular problems, and highly trained field representatives add up to an organization that can help you improve your products and your profits. Write to Shawinigan Resins Corporation, Dept. 7R, Springfield 1, Massachusetts.

SALES OFFICES: ATLANTA CHICAGO LOS ANGELES NEW YORK CLEVELAND SAN FRANCISCO GREENSBORO ST. LOUIS

GELVA® *polyvinyl acetate resins by* **SHAWINIGAN RESINS**®

HYSTER 4



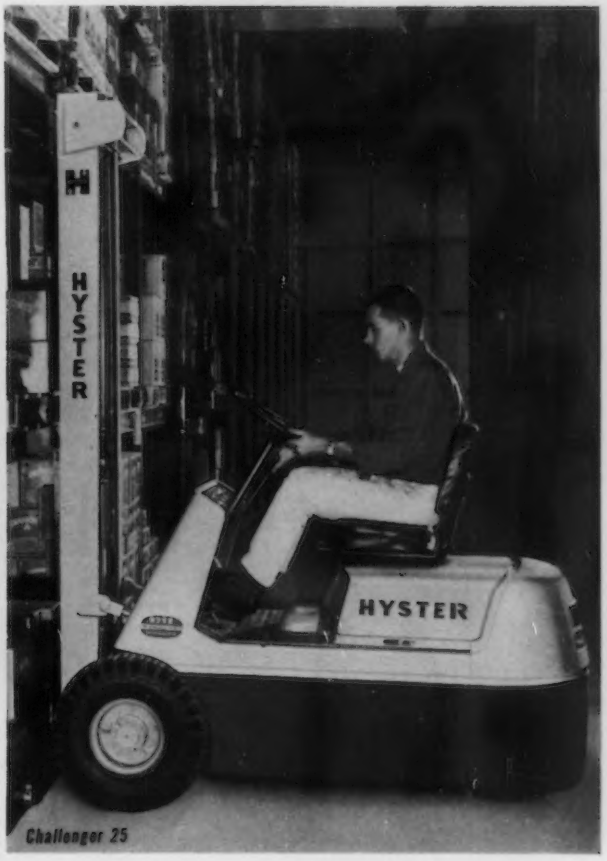
From HYSTER...World's Largest

SpaceSaver 20	CUSHION TIRES	2,000 LBS. CAPACITY
SpaceSaver 25	CUSHION TIRES	2,500 LBS. CAPACITY
Challenger 20	PNEUMATIC TIRES	2,000 LBS. CAPACITY
Challenger 25	PNEUMATIC TIRES	2,500 LBS. CAPACITY

- Monotrol control—Hystamatic transmission foot controlled.
- Fastest lift speed (105 fpm with 2,000-lb. load).
- Highest lift—lowest overhead clearance.
- Instant access to all components that require servicing.
- Functional "human engineered" design by Henry Dreyfuss.

TOTALLY NEW LIFT TRUCKS

2,000 AND 2,500 LB. CAPACITIES • CUSHION AND PNEUMATIC TIRES



Builder of 2,000-lb. Pneumatics

The line that sets the *ENGINEERING PACE* for all Lift Trucks –

HYSTER has it!

You can do 10 hours' work in 8 hours with these new Hyster trucks. They are so new – so far ahead of competition that no other trucks in the 2,000 and 2,500 lb. class can come close in *driver efficiency*, *safety* and *ease of control*, *power*, *lift speed*, *service accessibility* and *compactness*. Four great trucks – cushion and pneumatic tires – with a long list of exclusive features for safer, faster, cheaper handling than you have ever known before. Call your Hyster dealer or write for literature.

INDUSTRIAL TRUCK DIVISION—Lift trucks, mobile cranes, straddle carriers
TRACTOR EQUIPMENT DIVISION—Construction and logging equipment
MARTIN TRAILER DIVISION—Heavy machinery hauling trailers
INTERNATIONAL DIVISION—Overseas manufacturing, sales and service
Manufactured in: Portland, Oregon (Home Office) • Danville, Ill. • Peoria, Ill. • Kewanee, Ill.
Australia • Brazil • England • France • The Netherlands • Scotland • Union of South Africa

NEWEST TRUCKS – NO INVESTMENT – CUSTOM LEASING PLAN – CALL YOUR HYSTER DEALER

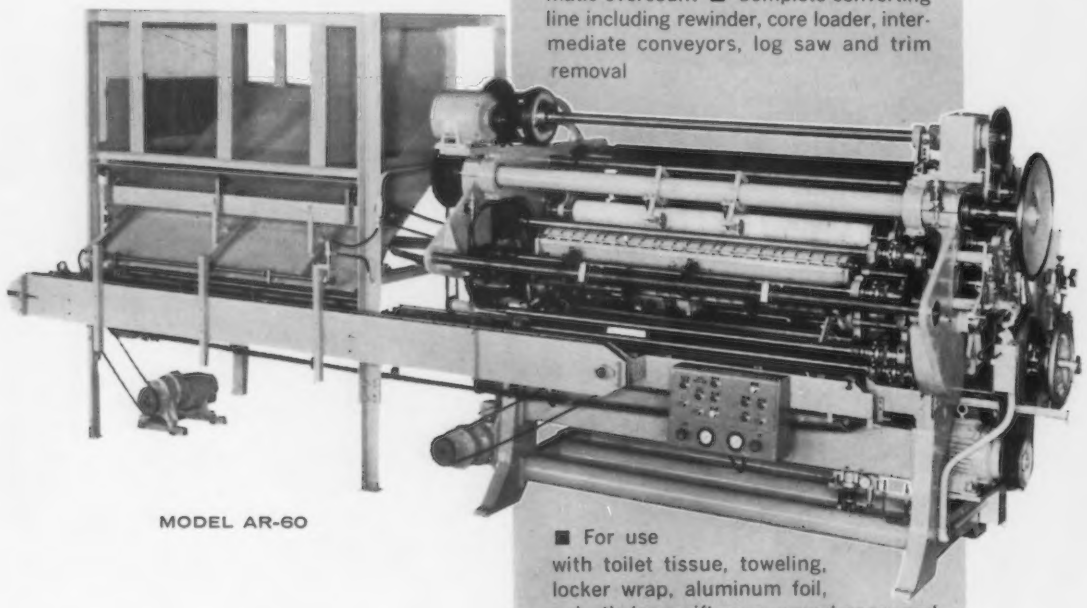
HYSTER COMPANY
INDUSTRIAL TRUCK DIVISION
P. O. Box 847 • Danville, Illinois

Automatic

REWINDER and CORE LOADER

■ **100 CASES OF TISSUE PER HOUR with one operator and a pair of rewinders*** ■ Automatic full speed, web transfer with positive cut-off and absolutely accurate count ■ Automatic core loading, roll stripping, log transfer, cull discharge with mandrels mounted in turret — no manual labor ■ Soft rolls for latest consumer preference and shear-cut perforator for positive easy sheet tear-off ■ Shaftless unwind up to 72" diameter ■ Automatic constant tension unwind control ■ Finished roll diameter control through automatic overcount ■ Complete converting line including rewinder, core loader, intermediate conveyors, log saw and trim removal

*Actual production figures based on 4½" x 4½" sheet size, 650 count rolls — 96 roll cases off 2-81" rewinders.



MODEL AR-60

■ For use with toilet tissue, toweling, locker wrap, aluminum foil, polyethylene, gift wrap, waxed paper and other roll products.

WANT TO KNOW MORE? Please call or write and we'll send you complete information and specifications.

FOLDERS, REWINDERS, EMBOSSERS, NAPKIN AND CORE MACHINES, LETTERPRESS AND FLEXOGRAPHIC PRESSES, SPECIAL CONVERTING MACHINERY.

creative engineering and development of converting machinery since 1919

P C M C

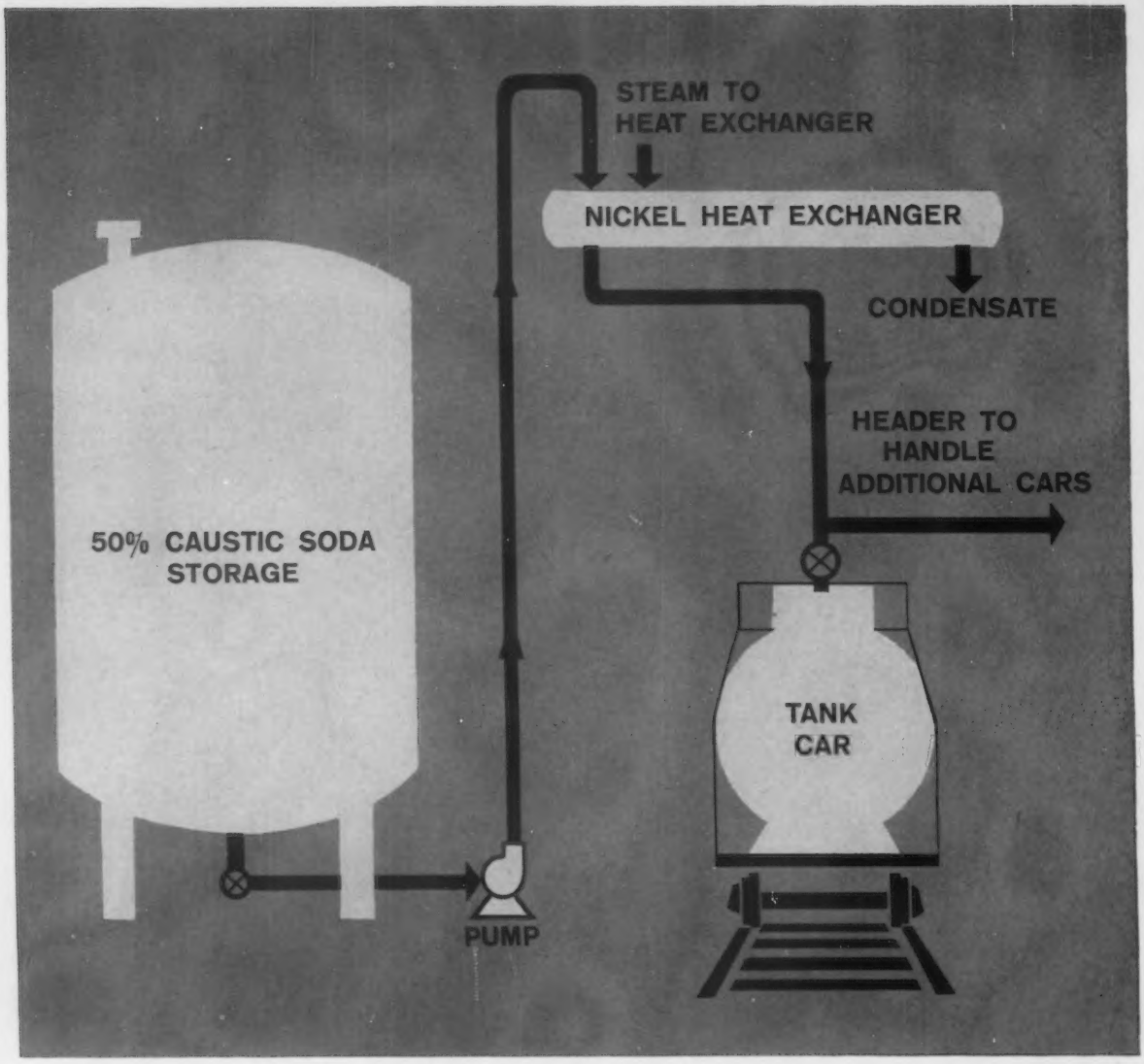
Paper Converting
MACHINE COMPANY
GREEN BAY, WISCONSIN

PUGET PULP

Puget Pulp's Bellingham Barker

start with PUGET PULP...
...the uniformly strong, clean, white
chlorine dioxide bleached
softwood sulphite

PUGET SOUND PULP & TIMBER CO.
BELLINGHAM • WASHINGTON



Liquid caustic soda won't freeze even in zero weather

Whatever the weather, Hooker liquid caustic soda flows. This is because Hooker caustic is "heat-treated" to resist cold weather.

The cost of heating a tank car of caustic in your yards to make it flow is a pure waste of money. So is the hidden cost that goes hand in hand with unloading delays.

As shown above, 50% Hooker liquid caustic is pumped from storage through a nickel heat exchanger and into the tank car. The product is heated approximately 25° F. to 30° F. above the loading temperatures applied during the milder seasons.

Since 50% liquid caustic freezes at 55° F., and even the heavily insulated Hooker tank cars lose about 4° F. of heat each day, the extra heat keeps the caustic from solidifying during normal shipping schedules. It's always ready to unload easily, quickly, and without additional expense.

Hot loading of caustic soda is another practical application of Hooker technical service. Data sheets on caustic soda and our caustic soda engineering and handling guide will be sent to you gladly on request.

HOOKER CHEMICAL CORPORATION

1803 FORTY-SEVENTH STREET, NIAGARA FALLS, NEW YORK

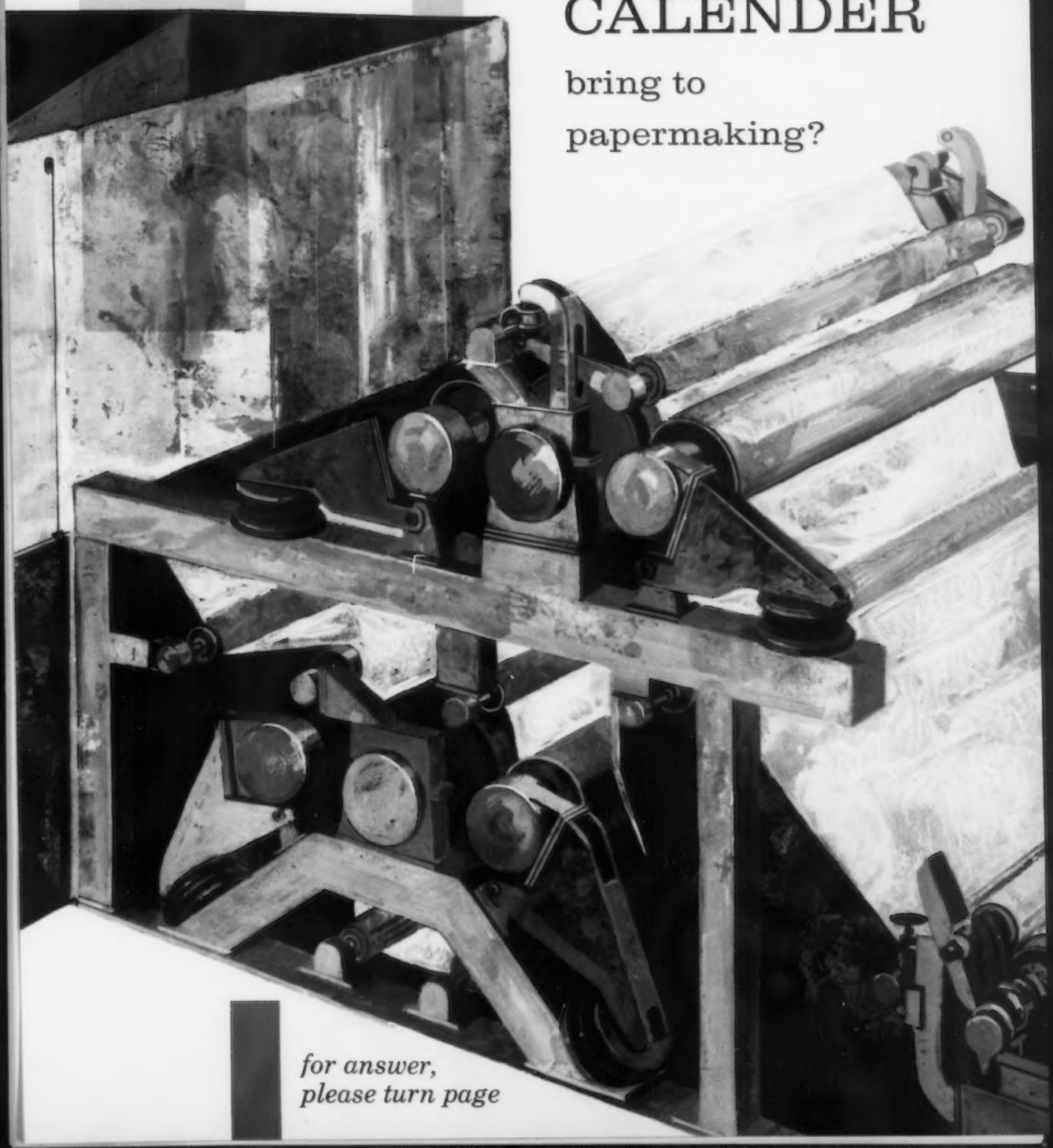
HOOKER CHEMICALS PLASTICS

Sales offices: Buffalo, Chicago, Detroit, Los Angeles, New York, Niagara Falls, Philadelphia, Tacoma, Worcester, Mass. *In Canada:* Hooker Chemicals Limited, North Vancouver, B.C.

what dramatic
new developments
does the

BELOIT GLOSS CALENDER

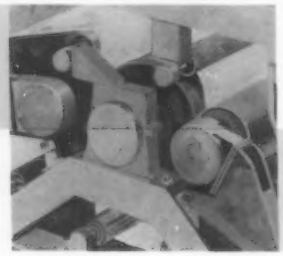
bring to
papermaking?



for answer,
please turn page

Beloit GLOSS CALENDER*

brings an improved calendering method to papermaking



While conventional machine calendering is accompanied by reduction in bulk, reduction in sheet strength, and other disadvantageous conditions, the BELOIT GLOSS CALENDER gives promise of producing equal or better finish while preserving bulk and strength.

Many intriguing possibilities are indicated for printing papers, food boards, pretreatment, and final finishing of coated papers, envelopes, and folding boxboards.

In operation, easy handling and improved machine efficiencies should result. The BELOIT GLOSS CALENDER may be used on or off the machine.

*U.S. and Foreign Patents Pending

BELOIT IRON WORKS · PAPER MACHINERY · BELOIT, WIS., U.S.A.

BELOIT

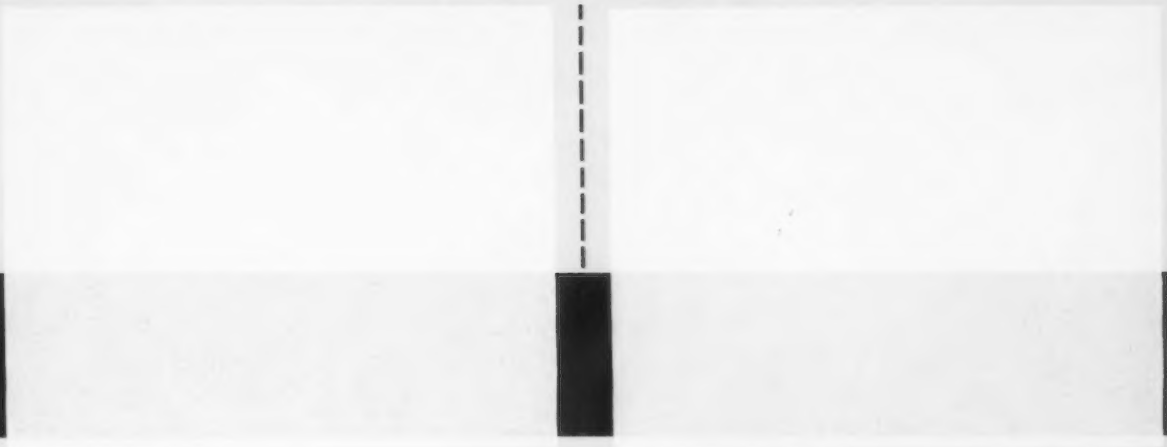
PAPER MACHINERY

your partner in papermaking

These swatches represent two entirely different titanium dioxide paper coatings.

One is an anatase grade, the other is a rutile grade.

CAN YOU TELL WHICH IS WHICH?



ONE IS THE NEW...

These two swatches of TiO_2 pigment have been applied by silk screen so that you can compare them quickly on this printed page. The formulas are nearly identical except that one contains a rutile grade, the other new *LD-C* anatase.

Although you'll achieve superior coating with regular paper mill machinery, the proof is there . . . new Glidden *LD-C* (on the right) has properties comparable to the rutile. The brightness of anatase is combined with the ease of dispersion and low viscosity features of rutile.

New *LD-C* is equally well suited for on and off machine, size press and calender coating. Compatible with all other common paper coating pigments and adhesives.

Being an anatase grade, new *LD-C* is for coating of all nonwaxing, plain and printed paper and board. And *LD-C* is priced as an anatase. Some users are obtaining savings of up to 2¢ per pound.

Higher machine speeds, heavier coating weights and other advantages are inherent in new *LD-C*. To get the full story, or samples, call your Glidden representative or our Baltimore headquarters.

GLIDDEN ZOPAQUE® LD-C

anatase grade TiO_2 especially developed for paper coating

QUALITY Glidden PRODUCTS

THE GLIDDEN COMPANY

FINEST PIGMENTS FOR INDUSTRY

Chemicals Division • Pigments and Color Department

Baltimore 26, Maryland

MANY GLIDDEN TECHNICAL FACILITIES ARE AT YOUR SERVICE for development or testing work in paper. Write for this new brochure—just off the press—*Paper Research and Development Laboratories.*

ADVERTISE UNTO OTHERS . . .

Open letter to suppliers who serve the paper and pulp industry

The Golden Rule applies to advertising as much as it does to other human relationships. It's just plain good business to "advertise unto others as you would have them advertise unto you."

You know what you want in an ad when you are considering a purchase:

- Quick identification of the product.
- An indication of what the product can do for you.
- Pictures, if they help you understand the product or how it works.
- Description—size, capacity, range, or other data to let you know whether or not the product meets your need.
- Evidence that the product does a good job for others, to assure you of its reliability and acceptance.
- Name and address of the company or its nearest dealer or representative, to enable you to get more information without delay.

These elements are what most of us would like to see in ads. Are these same elements being provided in the advertisements run by your company? If so, you can be sure your ads will be read carefully at the time your prospects need a product like yours. (Some of the mill men looking over this very issue need your kind of product right now.)

George E. Lockwood PUBLISHER

PAPER TRADE JOURNAL

Trends

Newsprint Output Hits New High

Production of newsprint in North America in January hit a new record high for this month. It was 3.2% above January 1960. U. S. output was up 2.7% over January last while Canadian output was up 3.4%.

How to Improve Paper Industry Earnings

Six factors that would improve the earnings record of our industry were pointed out by Lawrence K. Gessner of Smith, Barney & Co. in a very provocative address to the U. S. Pulp Producers Ass'n. Mr. Gessner's speech is summarized on page 33 of this issue.

Pulp Export Situation Reviewed

A highly interesting review of the pulp export picture was presented during Paper Week by Lawson P. Turcotte, president, Puget Sound Pulp and Timber Co. Mr. Turcotte's remarks which are presented on page 31 were made at a meeting of the Export Committee of APPA.

Merchant Sales off in January

Merchant sales of printing papers in January were 2.5% higher than a year ago but an additional working day indicated a decline of 2.4% according to NPTA. Merchant sales of wrapping papers were up 0.1% but corrected for the extra day showed a decrease of 4.7%.

Paper & Board Exports Exceed Million Tons

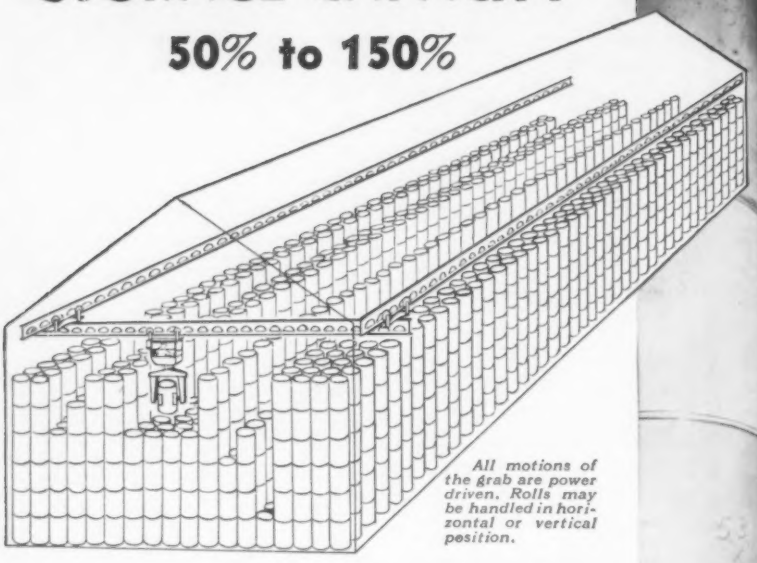
Preliminary census data for 1960 shows that paper and board exports for 1960 were over 1 million tons for the first time. Data is as follows:

	1960	1959	% Change
TOTAL	1,020,572	919,468	+11.0
Paper	361,055	355,042	+ 7.8
Paperboard	512,629	439,843	+16.5
Wet Machine Bd.	2,792	3,567	−21.7
Building Bd.	20,429	21,364	− 4.5
Converted Products	123,667	119,552	+ 3.4

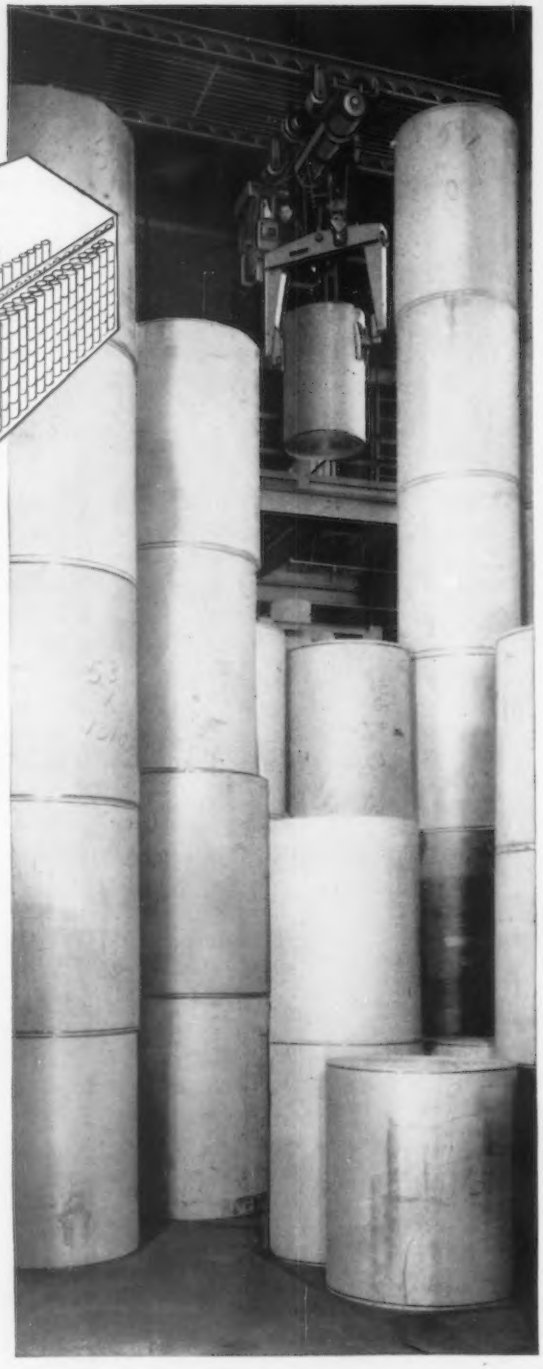
Preliminary census data also shows that wood pulp exports last year were 1,141,797 tons in comparison to 652,437 tons in 1959, an increase of 75%.

INCREASE ROLL STORAGE CAPACITY

50% to 150%



All motions of the grab are power driven. Rolls may be handled in horizontal or vertical position.



From 50% to 150% more rolls can be stored in a building that is of sufficient height to accommodate a Cleveland Tramrail overhead crane and power driven roll grab, because:

1. The entire floor area is utilized.
2. No aisle space for floor handling equipment is required.
3. Rolls are piled vertically 6 or 7 high (42 feet or more).

Rooms with many thousands of rolls can usually be served efficiently with only one man who handles all operations from the crane cab. Even where there are many different material classifications, any type roll may be quickly stored or retrieved.

Reduction in spoilage is another of the many advantages of the Cleveland Tramrail method. In some plants this means a savings of 1% of all material handled.

HYDRAULIC ROLL GRAB

Handles Paper, Board Stock, Etc., Like a Giant Hand

All motions of this powerful Cleveland Tramrail roll grab are hydraulically operated. It handles rolls to 6000 lbs., 24 to 60 inches in diameter, 36 to 120 inches long.

Rolls are held firmly, and even if the power should be interrupted, the grab will retain its hold for several hours. Rolls can be turned from horizontal to vertical position and vice-versa. The simplified design and rugged construction minimizes maintenance.

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
7104 East 287th Street, Wickliffe, Ohio

CLEVELAND TRAMRAIL
Overhead Materials Handling Equipment

PAPER TRADE JOURNAL
WEEK OF MARCH 6, 1961

IP Forms Overseas Division

The formation of a new division charged with direction and coordination of International Paper Co's exports of paper and paperboard from its United States mills and its interests in overseas production operations was announced by Richard C. Doane, president.

During 1959 and 1960, International Paper became associated with companies engaged in manufacturing operations in Western Germany, Italy, Israel, Greece and Venezuela. Since the first of this year, the company has announced transactions with W. R. Grace & Co. that extend its operations into Puerto Rico, Mexico and Colombia. International Paper has also recently announced plans for its participation in England with English associates in the manufacture, sale and distribution of Pure-Pak and Satona paper containers for packaging milk, fruit juices and other products.

John F. Howden, vice president of International Paper, has been named president of the new Overseas Division. Assisting him as vice presidents of the new division will be William D. Hurlbut, Gunnar M. Oleson, Wentworth Brown and Ernest de la Ossa.

International Paper has been a major exporter of paper for more than 50 years, but added that it has only been in recent years that the company has become a direct participant in overseas manufacturing operations.

Mr. Doane said that the new Overseas Division will be responsible for the development and coordination of company policies with respect to overseas manufacturing operations and its export sales.

The new division will also coordinate the efforts of the company's various overseas selling organizations, including International Paper Co. (Europe) Ltd., Barrand Cox, Ltd., and International Paper Co. of Africa (Pty), Ltd.

New Management Team Named for New York and Pennsylvania

New York & Pennsylvania Co., Inc., has named a new management team composed of five newly elected officers.

The team will be headed by A. G. Paine who was just elected president of the company. Mr. Paine had been vice president of the company since 1950. Directing financial operations of the company will be Harry S. Oliver, who was elected senior vice president. He will also continue as treasurer. As newly elected vice president and secretary, Jack B. Bryerton will supervise the company's insurance and credit programs, in addition to assisting Mr. Oliver. Most recently he was assistant secretary and assistant treasurer.

Directing manufacturing operations of the company will be Herbert C. Church, who was also named vice president. For the past two years, he has been concerned with manufacturing activities, and research and development.

Marshal M. H. Dana, elected vice president, will continue to direct the marketing operations of the company as he has been doing since 1958. Mr. Dana has been with New York and Penn for 22 years, serving in various sales and marketing positions.

The company employs over 2,700 people in its mills and on its 250,000 acres of woodlands in the U. S. and Canada. The latter is managed by Armstrong Forest Co., a division of New York and Penn. An additional facility producing high quality soda pulp is located in Willsboro, N. Y.

Scott to Take Over Subsidiaries

Scott Paper Co. will take over the assets and business of two wholly-owned subsidiaries, Coos Bay Pulp Corp. and Marinette Paper Co., thus bringing nearly 1,400 employees directly into the Scott organization and also simplifying the corporate structure.

The mills and plants of the two companies, acquired by Scott in the early 1940's, will continue to operate exactly as they have in the past. However, since the corporations as legal entities will cease to exist on March 31, 1961, the properties will be operated under the name of Scott, which will then be the direct owner.

Coos Bay has sulphite pulp mills in Anacortes, Wash. and Empire, Ore., and employs more than 230 people. Marinette operates a pulp and paper mill in Marinette, Wisc., and also has a paper mill and converting facilities in Fort Edward, N. Y.; 600 people are employed in Wisconsin and more than 500 in New York.

Paper and Paperboard Production

The American Paper and Pulp Association reported the ratio of the United States paper production to mill capacity for the week ending February 18, 1961, at 87.7 per cent, compared with 91.9 per cent, revised, for the preceding week. The ratio was 98.5 per cent for the corresponding week a year ago.

The National Paperboard Association reported the paperboard production ratio for the week ending February 18, 1961, at 87 per cent, compared with 90 per cent for the preceding week and 96 per cent for the corresponding week a year ago.

(Detailed Statistics on page 50)

PJT NEWS HIGHLIGHTS OF PAPER WEEK

Writing Paper Ass'n Celebrates Hundredth Anniversary

The Writing Paper Manufacturers Ass'n., the first trade association organized in this country, celebrated the 100th Anniversary of its founding in Pittsfield, Mass., on February 13, 1861. The Centennial was a high spot during the 84th Annual Paper Week of the American Paper and Pulp Ass'n., of which WPMA is a member. The Writing Paper Manufacturers Ass'n. is the oldest national trade association of any kind in the United States. Its nearest rivals for the title are the U. S. Brewers Ass'n. and The American Bureau of Shipping, both founded in 1862.

D. S. Leslie was elected president. Mr. Leslie is president of the Hammermill Paper Co. and a former president of APPA. Walker J. Hosmer, Millers Falls Paper Co., was elected vice-president and chairman of the Cotton Fiber Paper Group. G. E. Veneman, Nekoosa-Edwards Paper Co., was reelected vice president and chairman of the Sulphite Bond Group. M. C. Dobrow was reelected executive secretary-treasurer. John F. Darrow was reelected assistant secretary and Miss Olive F. McGill was reelected assistant treasurer.

Scrolls in appreciation of their services to the Writing Paper Manufacturers Ass'n. were presented to F. Raymond Andrews, Esleeck Manufacturing Co.; Norman Bardeen, Simpson Lee Paper Co.; Arthur Crane, Crane & Co., Inc.; and Robert Crane, Byron Weston Co.

Mr. Crane's scroll was presented on the occasion of his retiring from the presidency of the association after a two-year term. The scroll also cited the fact that he previously had served as chairman of the Thin Paper Group of the association. Mr. Bardeen was presented with a scroll which commended him for having served as chairman of the Cover and Text Paper Group from January 1958 through January 1961. F. Raymond Andrews' scroll noted that he had been chairman of the Cotton Fiber Paper Group, 1959-1961, and Robert Crane's scroll cited his service on the Association Executive Committee, 1957-1961.

"Preliminary figures for 1960 show sales of fine paper one per cent higher than in 1959," M. C. Dobrow, executive secretary of WPMA reported to the members. "The 1960 gain of only one per cent over 1959 —the previous record year—was far smaller than the 11 per cent gain of 1959 over 1958," he added. "Capacity of fine paper at the end of this year will be 2,100,000 tons. On a six-day basis, operations for the whole paper industry probably will average about 90 per cent. On a six and a half day basis, the operating ratio would be 84 per cent.

In honor of its Centennial celebration, the Writing Paper Manufacturers Ass'n. was presented with a plaque bearing the tribute from Dwight D. Eisenhower a few weeks before leaving office. The gift was made at the Annual Dinner of APPA which this year was a salute to the WPMA on its 100th Anniversary. The presentation was made on behalf of APPA by its president, Howard E. Whitaker, and its executive secretary, Robert E. O'Connor. The plaque was accepted on behalf of the writing paper group by its president, Mr. Crane, and its executive secretary, Mr. Dobrow.

Glassine and Greaseproof Elects New Officers

T. Richard Probst, president of Deerfield Glassine Co., Inc., Monroe Bridge, Mass., was elected vice chairman of the Glassine & Greaseproof Manufacturers Ass'n. The announcement was made by Charles H. Leach, secretary-treasurer of GGMA following the association's 30th Annual Meeting, on February 22. Mr. Probst became president of Deerfield Glassine Co., Inc., in 1959, after serving as executive vice president. He was at one time vice president of Keith Paper Co., then owned by Deerfield Glassine Co., and vice president of operations of Brown Co. Mr. Probst has also been employed in various capacities by Eastern Corp., Bangor, Me.; Oxford Paper Co., Rumford, Me.; and Gilbert Paper Co. For several years he was assistant general manager of Oregon Pulp & Paper Co.

Arnold G. Hamersley, president of Hamersley Manufacturing Co., was elected alternate representative of the Glassine & Greaseproof Manufacturers Ass'n. on the Board of Governors of APPA. Mr. Hamersley is also a member of the Executive Committee of GGMA and was the first chairman of the association's Publicity Committee.

Tissue Ass'n. New President Is L. R. Watson

The newly elected president of the Tissue Ass'n., Inc., is Lloyd Robert Watson, vice president and general manager of The Tuttle Press Co., Appleton, Wis. Long active in Tissue Ass'n. affairs, Mr. Watson has served on its board of directors for many years and was named vice president in 1960. The new vice president of the association is R. A. Nash, vice president of Sorg Paper Co., Middletown, Ohio. Re-elected as treasurer was F. W. Erisman, executive vice president, Erving Paper Mills, Erving, Mass. C. J. Carey was again named executive secretary of the association.

Syracuse P&P Alumni Meet For 27th Annual Luncheon

Pulp and paper alumni of the College of Forestry at Syracuse University held their 27th annual luncheon during Paper Week. Honoring the 50th anniversary of the school, the luncheon also gave recognition to the 25th anniversary of the class of 1936.

During the luncheon, it was announced that J. J. Sullivan, Lowe Paper Co., would succeed L. R. Ayers, Continental Can, as president of the Pulp and Paper Alumni group. Walter F. Reynolds, American Cyanamid, moves up to the vice-presidency and D. B. Geffken, Sealright-Oswego Falls Corp., takes over the post of secretary-treasurer.

Speakers at the affair were: Dean of the College of Forestry, Hardy L. Shirley; F. W. O'Neil, chairman—P & P Department; Robert F. Vokes, president—Syracuse Pulp and Paper Foundation; Franck C. Ash, president—College Board of Trustees.

Printing Paper Men Hear of New Records; Re-elect Glatfelter

Printing paper manufacture in the United States, exclusive of newsprint and fine paper, reached an all-time high last year with an output of 4,725,000 tons. This was an increase of five per cent over the printing paper output of 1959, as compared with the increase of a little less than one per cent in the same period for all types of paper and board.

These figures were announced at the Annual Meeting of the Printing Paper Manufacturers Ass'n., Inc. Philip H. Glatfelter III, president of P. H. Glatfelter Co., Spring Grove, Pa., was re-elected chairman of the association for 1961.

P. H. Glatfelter III

During 1960 manufacturers of printing paper operated at about 90 per cent of six and one-half day practical capacity. During the year the industry showed its confidence in the future by increasing capacity by 305,000 tons or about six per cent.

Preliminary analysis of 1960 sales by customer groups would indicate that shipments for periodicals publishing and for commercial printing increased over 1959 while sales for converting, for book publishing and for the manufacture of labels and wraps were about the same or declined somewhat. Sales for periodical publishing, the largest customer group, were up seven per cent. Among types of paper, production of machine coated printing and converting paper was up ten per cent last year to record another outstanding increase.

Printing paper manufacturers look forward to a good year in 1961. The most likely guess is that production will be about the same as last year. However, a business recovery beginning in the second or early in the third quarter of the year could stimulate higher advertising expenditures during the latter part of 1961. Should this take place, it is possible that 1961 output would increase to 4,800,000 tons, up some 1½ per cent to two per cent. The industry is planning an additional increase in capacity of about three per cent during 1961, thus furthering its constant aim of providing printers, publishers, and converters with a reliable and adequate supply of the finest possible paper.

In addition to Mr. Glatfelter, the following officers were elected: A. M. McBurney, Oxford Paper Co., vice chairman; and F. H. Murtfeldt, Consolidated Water Power and Paper Co., vice chairman. The following were elected members of the association's executive committee: W. K. Graves, International Paper Co.; Mr. McBurney; L. W. Miller, Fraser Paper, Ltd.; W. H. Wilcox, S. D. Warren Co.; and B. V. Wright, The Champion Paper and Fibre Co.

NCSI: Old Headaches; New Horizons for Pollution Control

As its annual meeting, the National Council for Stream Improvement heard George E. Dyke, chairman, review the accomplishments and future plans of the pulp and paper industry with regard to atmospheric and liquid waste disposal problems. Rather than comment in detail on specific projects, Mr. Dyke referred to the first Biennial Report of the Council entitled "Search and Research". This report differs somewhat in approach from the previous Annual Reports in that it is of a more factual nature than was previously the case and might be considered a textbook on industrial waste treatment in the pulp and paper industry, it was revealed.

The accomplishments in pollution abatement by the pulp and paper industry since the start of its organized program in 1943 have been substantial.

While annual production of paper and paperboard has doubled to 34,000,000 tons between 1943 and 1959, the overall pollution load has shown a slight two per cent decrease. In other words, the current pollution per ton of product is less than 50 per cent that in 1943, the same percentage by which water use per ton has been decreased. From a conservation viewpoint, the recovery techniques in the mills used have reduced fiber loss from 5 to 2 per cent, which is equivalent to over one and a half million cords of pulpwood annually.

With respect to research, two new projects were undertaken during the year. One at the Institute of Paper Chemistry on aquatic biology and the other at Louisiana State University in connection with air pollution is studying black liquor oxidation.

The application of basic Council research was especially notable in the field of biological treatment where a considerable number of full-scale activated sludge plants and oxidation lagoons are now in operation or under construction. A total of nine new companies became members of the Council during the year, including one large proposed mill not yet under construction.

"Water Pollution: Old Headaches, and New Horizons" set the theme of the technical sessions. This address was presented by Dr. Morris M. Coke, editorial director of Wastes Engineering and Water Works Engineering. The session was chairmanned by K. P. Geohegan, vice president of Howard Paper Mills Division of St. Regis.

Present and future water availability was tackled by O. D. Mussey, hydraulic engineer with the Interior Department. W. L. Klein, chemist-biologist on the Ohio River Valley Water Sanitation Commission described the ORSANCO water analysis program on the Ohio River. D. F. Adams, head of the Air Pollution Research Laboratory at Washington State University reported on "Sampling and Identification of Waste Gases from Kraft Pulp Mills." C. S. Huestis, general manager of bleached board production for Continental Can Co. depicted effluent treatment at their new Augusta, Ga., mill. Lastly, waste treatment activities by West Va. Co.'s, Luke, Md. mill were pointed out by George M. Griffith, maintenance superintendent.

The following officers of the National Council were elected during the meeting: chairman, George E. Dyke; vice-chairman, Karl R. Bendetsen, Russell F. Erickson; treasurer, E. Nobles Lowe; executive secretary and assistant treasurer, Russell L. Winget.

Laegerloef Reports World Paper Use Rises 150% from 1937 to 1959

World consumption of paper increased from 32.6 million tons in 1937 to 79.8 million tons in 1959, a rise of 150 per cent, Eric Laegerloef, secretary of the American Paper and Pulp Ass'n.'s Export Committee revealed at the committee's meeting. Apparent world consumption of paper increased from 57.4 million tons in 1954 to 79.8 million tons in 1959. This is a rise of 22.4 million tons or 40 per cent.

Mr. Laegerloef's report supplements the committee's 1956 report by bringing the figures up to 1959 and adding figures for 1954 and 1937. The report covers 13 world areas, supplemented by individual data for 112 countries. Consideration has been given to the many political and economic changes which have occurred in the world during recent years, especially in Western Europe, which data has been set-up on a trade-bloc basis, as well as a composite picture for all that area; inclusive of Northern Europe.

Eric Laegerloef

The main purpose of the survey, Mr. Laegerloef said, is to show the growth over a period of years of per capita consumption of paper by country and over the world. World per capita growth has increased from 32.4 lbs. in 1937 to 50 lbs. in 1959. Since 1954 the growth has been a pound a year, and should increase moderately from now on.

Kraft Paper Elects Officers; Hears Speakers

At the Annual Meeting of the Kraft Paper Ass'n., R. A. Nash, vice president of the Sorg Paper Co., was elected president of the association and J. C. Hair, Crossett Paper Mills, was elected vice president. In addition to the regular annual reports by the secretary-treasurer and the president, two guest speakers and the association's counsel addressed the members.

William R. Adams, president of St. Regis Paper Co., spoke on the subject, "Our Industry Position Today." In this talk he reviewed the development of today's plant for kraft paper production, its present over-capacity and the problems which that over-capacity has raised. New uses and products are needed to take up the present slack and the companies individually and by collective effort are working toward this solution to the present over-supply of kraft paper.

I. B. Oseas, counsel for the association, addressed its members on the subject, "Contacts With Competitors" in which he reviewed the serious legal difficulties in which many electric equipment manufacturers recently found themselves as a result of collusion. He discussed the legal risks involved in informal contacts among competitors compared with those of Trade Associations.

Peter W. Hoguet, president of The Econometric Institute, Inc., concluded the business part of the meeting with his address entitled, "The Outlook for the Economy and Demand for Kraft Paper in 1961."

Mangan Feted by U. of M. Alumni

Thomas G. Mangan, retired mill manager of International Paper Co.'s Livermore Falls, Me., establishment, was named to the 1961 honor award at the University of Maine Pulp and Paper Alumni Luncheon held February 22.

J. L. Ober, president of the Pulp and Paper Foundation, read the citation and presented the award to Mr. Mangan as one of the features of the annual affair. Mr. Mangan is a charter member of the Foundation and served as one of its directors for nine years.

Robert A. Bicks, now a partner in the New York law firm of Breed Abbott & Morgan, was the luncheon's featured speaker. Mr. Bicks is the former head of the U. S. Dept. of Justice Antitrust Division. He is also the U. S. Junior Chamber of Commerce's outstanding man for 1960.

Mr. Bicks informal talk was concerned with why his division played a prominent role as policy-maker in antitrust actions in the last few years.

F. A. Soderberg, vice president of the Foundation, reiterated the objectives and program of the expanded second summer institute to be held on the U. of M. campus, July 10-August 17. Two three-week courses will be given in the fundamental theory and practice of pulp and paper manufacture. The institute, staffed by men known throughout the industry, is designed for employes of the paper and allied trades involved in research, engineering and sales, service, supervision, and administration who wish to broaden or review their profession.

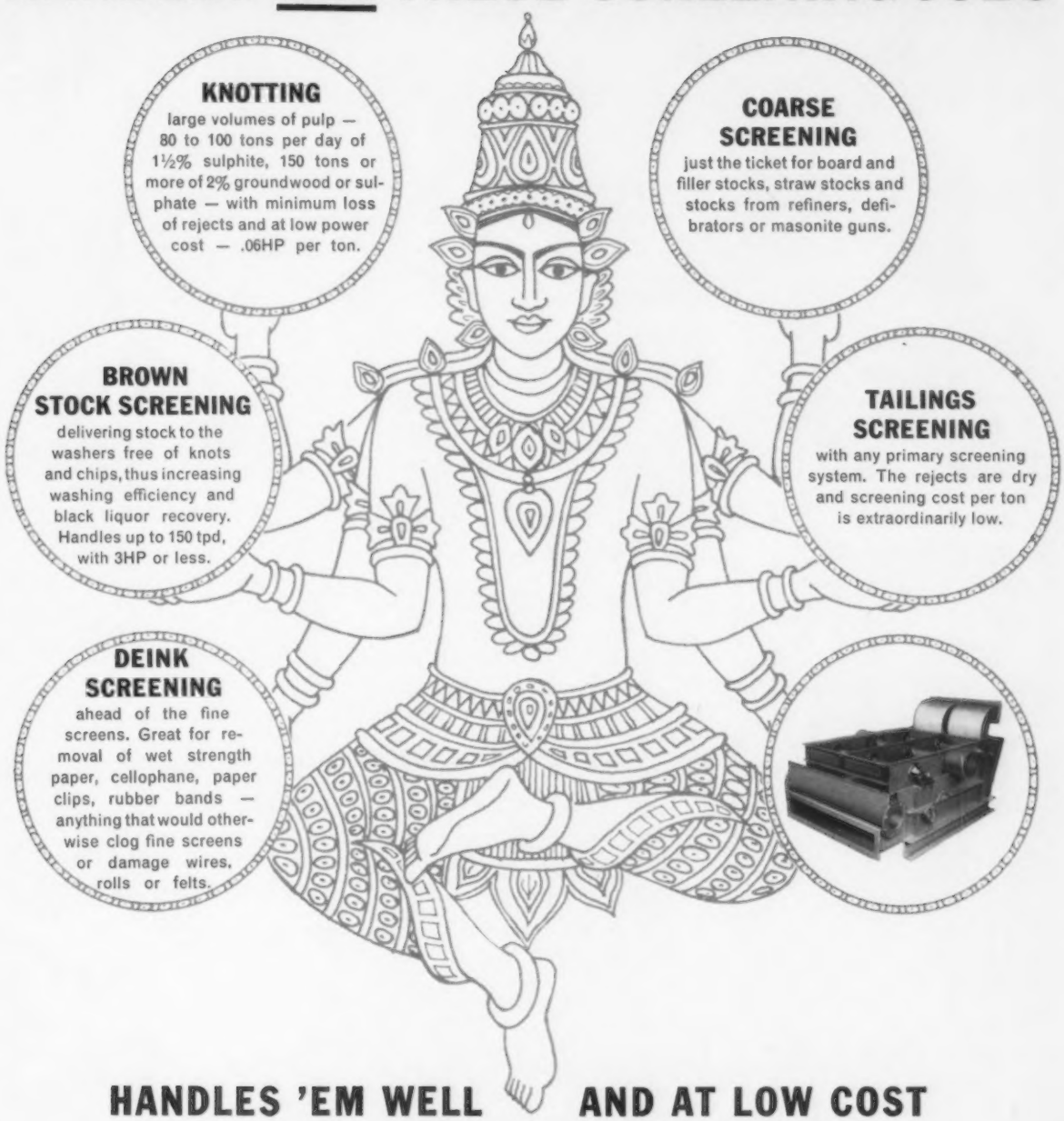
Honor guests at the luncheon included: Charles Crossland, resident secretary of the Foundation; Philip Nethercut, executive secretary, TAPPI; Raymond Fogler, president of the University's board of trustees; J. R. Lientz, retiring president, TAPPI; W. H. Chisholm, president, Oxford Paper Co.; M. McDonald, president, Great Northern Paper Co.; H. A. Annis, newly-elected TAPPI prexy; R. Wilkins, president, Bird & Son; and T. Russell Wooley, executive director, U. of M. General Alumni Ass'n. Peter Calott, Penick & Ford, served as chairman of the luncheon.

Tissue Ass'n. Elects Directors

At its annual meeting of members, The Tissue Ass'n. elected the following four directors for three year terms.

Conrad T. Waldie, vice president of the Brown Co., is general manager of its Towel & Tissue Division. L. W. Gould of Crown Zellerbach Corp. is assistant vice president of the San Francisco based producer, in charge of its eastern headquarters. W. J. Servotte, who is a past president of The Tissue Ass'n., is president of Bay West Paper Co. Gordon L. Ware has served as vice president of the association and chairman of its Industrial Sanitary Division. He is vice president and treasurer of Straubel Paper Co.

HANDLES ALL THESE SCREENING JOBS



KNOTTING
large volumes of pulp — 80 to 100 tons per day of 1½% sulphite, 150 tons or more of 2% groundwood or sulphate — with minimum loss of rejects and at low power cost — .06HP per ton.

COARSE SCREENING
just the ticket for board and filler stocks, straw stocks and stocks from refiners, defibrators or masonite guns.

BROWN STOCK SCREENING
delivering stock to the washers free of knots and chips, thus increasing washing efficiency and black liquor recovery. Handles up to 150 tpd, with 3HP or less.

TAILINGS SCREENING
with any primary screening system. The rejects are dry and screening cost per ton is extraordinarily low.

DEINK SCREENING
ahead of the fine screens. Great for removal of wet strength paper, cellophane, paper clips, rubber bands — anything that would otherwise clog fine screens or damage wires, rolls or felts.

HANDLES 'EM WELL AND AT LOW COST

The BIRD-JONSSON SCREEN

Ask us to show you how well it can handle *your* screening requirements and how much it will save.

BIRD MACHINE COMPANY

SOUTH WALPOLE, MASS.
REGIONAL OFFICES: EVANSTON, ILLINOIS
PORTLAND, OREGON • ATLANTA 9, GEORGIA
Canadian Manufacturers of Bird Machinery
CANADIAN INGERSOLL-RAND COMPANY, Limited, Montreal

PAPER PEOPLE

C. W. Coker

Sonoco Directors Elect C. W. Coker President

C. W. Coker was named president of Sonoco Products Co., Hartsville, S. C., at the board of directors meeting held in Hartsville, February 21. He succeeds James L. Coker, III, who died recently.

Mr. Coker began work with Sonoco in 1930 in the production department. He was elected vice president in 1931 and executive vice president in 1950.

He is the grandson of Sonoco's founder, Major James Lide Coker. His father, Charles Westfield Coker, served as Sonoco's president from 1918-1931 and was instrumental in the development of the company to a position of leadership in the paper cones, tubes and carriers for the textile industry.

A native of Hartsville, Mr. Coker graduated from the University of South Carolina and attended the Harvard School of Business. In 1958 he received an honorary degree of Doctor of Laws from the University of South Carolina.

The Board of Directors was unanimously re-elected. They include: C. W. Coker, C. H. Campbell, R. G. Coker, J. H. Martin, R. A. Terry. Also, C. K. Dunlap, Sr., G. W. Blunt White, E. H. Lawton, J. H. Lineberger, R. R. Coker, A. H. Gildersleeve and P. L. McCall.

Re-elected as company officers were C. H. Campbell, vice president in charge of sales; R. G. Coker, vice president in charge of engineering; J. H. Martin, vice president; and R. A. Terry, treasurer.

Mosinee Fills Newly Created Vice Presidencies

Three new vice presidents have been elected at the Mosinee Paper Mills Co. All are new positions in the firm.

John McPherson, plant manager, was appointed vice president of operations. Clarence Scholtens, controller, was named vice president of finance. Robert T. Seith, former sales manager, is now vice president of marketing.

Brownsville Paper Elects Officers

Brownsville Paper Co., Brownsville, N. Y., has elected the following officers.

Orin R. Summerville has been named president; Albert W. Horr, vice president and assistant treasurer; Francis C. Lingenfelter, vice president and secretary; and Mrs. B. B. Moore, treasurer and assistant secretary.

H. L. Barrick

KVP Sutherland Names Market Research Manager

Harold L. Barrick has been named manager of the marketing research department for the Sutherland Division, KVP Sutherland Paper Co.

Prior to his new assignment, Mr. Barrick served as marketing research analyst for the Tractor and Implement Division of the Ford Motor Co. He received a Master's degree in marketing at Rutgers University.

Riegel Joins Downington Design Engineering Staff

Downington Paper Co. has named Peter Riegel a project engineer on its design engineering staff. Formerly with Climax Molybdenum Co., he was graduated in 1959 from Purdue University as a mechanical engineer.

Floyd Duncan

A.N.D. Appoints Groundwood Superintendent

Anglo-Newfoundland Development Co., Ltd., has appointed Floyd Duncan groundwood superintendent, replacing Jack Dunphy who recently resigned.

Mr. Duncan was, up to the time of taking this position, employed with Crown Zellerbach of Canada, Ltd., at Ocean Falls as assistant groundwood superintendent.

East Texas Pulp and Paper Announces Appointments

Several appointments and changes in the East Texas Pulp and Paper Co. management have been announced. The Eastex mill is located at Evadale, Texas.

A. G. Natwick, vice president, production, will retire from day-to-day responsibility for this phase of operations June 15, but remain in a consulting capacity.

W. E. Merrem, vice president and veteran of 37 years service with Eastex and its Southwestern Settlement and Development Division, is retiring from active duty May 31, but will continue in a consulting capacity.

Upon Mr. Natwick's retirement Ray Brown, now assistant resident manager, will become resident manager; R. L. Paret, now plant engineer, will take on the assignment of production manager reporting to Mr. Brown, and L. P. Bundy, now electrical supervisor, will succeed Mr. Paret as plant engineer.

REVOLUTIONARY • PROVEN
PREFERRED
DRAPLEX Felts
NEEDLED
MADE ONLY BY
DRAPER BROTHERS COMPANY
CANTON, MASS.

V. R. Coudert, Jr.

R. N. LeClair

Montmorency Paper Names V-P's

Montmorency Paper Co., Inc., has named Victor R. Coudert, Jr., and Roland N. LeClair vice presidents.

Montmorency is the United States sales and service representative for Anglo Paper Products, Ltd., the world-wide sales organization for the products of Anglo-Canadian Pulp and Paper Mills, Ltd., Quebec, P. Q., and Dryden Paper Co., Ltd., Dryden, Ontario.

Mr. Coudert had been Eastern sales manager for the products of Anglo and Dryden in the United States, after having served customers in the Midwest. A graduate of Yale University ('46) and Harvard Business School ('50), Mr. Coudert also served as a reserve officer in the United States Navy.

Mr. LeClair has been Midwest sales manager for Anglo Paper Products since 1956. Previously, he had been personnel superintendent for Anglo-Canadian's mill at Quebec City and, before that, had been with Consolidated Paper Corp.

Both Mr. Coudert and Mr. LeClair will have offices at 60 East 42nd Street, New York 17.

McGuirk Joins Finch, Pruyn Sales Staff

Appointment of Richard G. McGuirk as a sales representative for Finch, Pruyn and Co., Inc., Glens Falls paper manufacturer, has been announced.

Mr. McGuirk's sales territory will comprise Pennsylvania and Ohio, with general assignments in the middle Atlantic states. A 1952 graduate of Siena college, he served two years in the Navy. He was formerly a sales representative for the Upjohn Co.

Liersch Joins CFP As Vice President

John Liersch, who resigned recently from a vice presidency of MacMillan, Bloedel & Powell River, Ltd., B.C., has been appointed vice president in charge of development for Canadian Forest Products, Ltd.

In his new post, Mr. Liersch will be in charge of plans for pulp manufacturing expansion and other facets of Canadian Forest's operations.

One-time head of the forestry department at University of B. C., Mr. Liersch was vice president in charge of pulp and paper production when he resigned from Mac-Powell.

Mr. Liersch will also take charge of the company's planned pulp operation in Alberta. CFP is, it is said, making progress in its surveys and negotiations with the Alberta government for a long term pulp lease. It was recently emphasized, however, that before the company makes any move into Alberta it will expand its Port Mellon mill.

Stevens Paper Announces Management Realignment

Stevens Paper Mills, Inc., with plants in Westfield and South Hadley Falls, Mass., has announced a realignment in the management for its Massachusetts mills.

Donald E. Drake, who resigned as general manager because of health reasons, will become manager of research and development. William G. Gaitenby, former assistant general superintendent, will be manager of production of the Massachusetts mills.

Harold E. Drake, in charge of administration, purchasing and personnel relations, will assume additional duties as assistant to the president.

Nashua Corp. Purchases New Jersey Firm

Nashua Corp., Nashua, N. H., has announced that it is purchasing the assets and business of Gubelman Charts, Inc., of Newark, N. J. Gubelman, a well known printer and distributor of recording instrument charts, will continue to be operated in its plant in Newark as a division of Nashua Corp. Henry H. Mills, president, and Paul E. Kroekel, vice president of Gubelman, will remain with the division as general manager

MULTI-METAL FACE WIRES HARMONIZE ON ALL COUNTS

✓Rugged
✓Uniform
✓Flexible

Multi-Metal Single Twist Cable Warp and all popular meshes are available up to 244" wide in stainless steel, Types 304, 316 and 317ELC, and in Monel metal.

Write for Multi-Metal record book and slide calculator. They will be mighty helpful to you—and they're free.

MM MULTI-METAL WIRE CLOTH CO., INC.
1348 Garrison Ave., New York 59, N. Y.

and plant manager, respectively.

In commenting on the acquisition, James R. Carter, president of Nashua Corp., said: "The purchase of Gubelman will enable our company to expand its efforts in new areas of the chart paper field. Nashua now manufactures sensitized chart papers for use with a heated stylus in industrial oscillographs and electrocardiograph machines. Through the Gubelman facilities we will now be able to produce other types of charts which will supplement our existing line and contribute to our sales growth and profits.

Great Northern Appoints Four Group Leaders

Great Northern Paper Co. has appointed four to group leader positions They are Winfield C. Hodgkins, who becomes quality control group leader. Frank J. Krasofski, who becomes analytical group leader. Richard T. Thaxter to pulp research group leader and Patrick H. Welch, who becomes technical service group leader.

All four have been in the Great Northern organization previous to these appointments, Mr. Hodgkins as paper research group leader, Mr. Krasofski as organic chemist, Mr. Thaxter as pulp mill process engineer, and Mr. Welch as a chemist and group leader of the analytical laboratory.

Ocker Retires from Bemis Wichita Post

M. E. Ocker, manager of the Wichita plant and sales division of Bemis Bro. Bag Co. since 1928, retired from the company February 28. He has been with Bemis for more than 50 years.

Mr. Ocker will be succeeded at Wichita by George W. Finlay, as announced by Bemis in November, 1960.

The retiring manager, a native of Kansas City, Mo., joined Bemis as an office boy in August, 1910. He remained in the Kansas City office until 1922, serving in all office positions. He moved then to Wichita as a salesman and continued in sales work until his appointment as manager of the plant and sales division.

Mr. Finlay, who joined Bemis in 1946, two years later became office manager at the company's plant in Mobile, Ala. He served there in office, production and sales positions before becoming supervisor for multiwall bag sales in St. Louis in 1957.

Colin Gardner, III

Standard Packaging Names V-P Mill Operations

Colin Gardner III has been appointed vice president and general manager of mills operations, according to an announcement by Standard Packaging Corp. board chairman, R. Carl Chandler.

Three operating divisions will be under Mr. Gardner's direct supervision. One of these, Eastern Fine Paper and Pulp Division, with mills at Brewer and Lincoln, Me., produces the Atlantic and Manifest brands of printing and office papers. Another, Chemical Fine Paper & Board Division, with two mills at Holyoke, Mass., manufactures specialty papers and folding box board. The third, Missisquoi Specialty Board Division, makes groundwood specialty boards in its mill at Sheldon Springs, Vermont. Office and reproduction papers of all three divisions are also combined for sale under the Stan-Pak Run-Rite brand name.

Mr. Gardner was formerly vice president in charge of operations at the Gardner Board & Carton Co., Middletown, Ohio, until this firm was merged with Diamond Match Co. He then became group vice president at Diamond National Corp. where he was responsible for the planning and operations of three of the company's major divisions, including the Gardner Division.

Hobbs Assumes Added Duties at O-I Mill Div.

Edward D. Hobbs, of Jacksonville, Fla., has been named general manager of Bahamas, marine, and allied operations for the Owens-Illinois Mill Division.

Mr. Hobbs, who has been in charge of the Mill Division's marine and allied operations, is taking on the additional job of running the O-I pulpwood cutting operations in the Bahama Islands.

PJT NEWS OF CONVERTERS

Container Corp. Establishing Houston Plant

Container Corp. of America has announced that it is establishing a plant in Houston, Texas, to manufacture corrugated paperboard packaging products.

The company presently operates a corrugated shipping container plant in Fort Worth and a folding carton plant in Arlington, a few miles east of Fort Worth.

Container Corp. has signed an agreement leasing a building which the Mabray-Nesmith Co. has just completed. An addition will be made to the building, and the company plans to begin operations in the new location about May 1.

The plant, a one-story building, will be equipped with a printer slotter, die cutting, taping, gluing and stitching equipment and will produce a complete line of corrugated packaging products.

Administration of the plant will be under the direction of the company's Fort Worth personnel: L. M. Cutter, general manager; B. B. Gant, sales manager, and S. O. Baughman, plant manager. J. W. Taylor, assistant sales manager, and A. J. Smith, superintendent, will be located at the Houston property.

Morse Joins Alton Box As Assistant to President

True D. Morse, Under-Secretary of Agriculture for eight years in the Eisenhower Administration, has been named assistant to the president of the Alton Box Co. in a consulting capacity. His background in business, agriculture and government will be used in counseling the firm's management and customers.

Before his government service Mr. Morse, an attorney, was president, and board chairman of Doane Agricultural Service of St. Louis. Since leaving the administration he has established offices as a business and agricultural consultant.

Diem & Wing Announces Management Changes

E. W. Wesselmann, formerly president of Diem & Wing Paper Co., Cincinnati, Ohio, was elected chairman of the board and treasurer of the specialty paper bag and tape manufacturing firm.

J. H. Schneider, who was vice president, was elected president and P. A. Stuhlreyer, Jr., secretary, was elected vice president and secretary.

W. F. Roemler, treasurer and director, has retired after more than 50 years of service.

O. D. Roemler remains as assistant secretary and A. B. Einspanier was appointed assistant sales manager of industrial papers.

Johnsen Again Heads Business Forms Institute

Lester J. Johnsen, executive vice president of Atlantic Register Co., Waltham, Mass., who has been reelected president of the Business Forms Institute, trade association of the manifold business forms industry, has announced a vigorously implemented new program for 1961.

In April, a group of experts is scheduled to study and make recommendations on accounting and finance, industrial relations (both in factory and office), manufacturing (including all phases of production), sales, covering all statistical and promotional aspects.

Garner Dunkerley, Jr., president of Ennis Business Forms, Inc., Ennis, Tex., has been elected first vice president of the Institute; Thomas A. Taylor, vice president, Schwabacher-Frey Company, San Francisco, has been reelected second vice president of the BFI, and Mrs. L. F. Meloney, Greenwich, Conn., has been named as executive director of the association the offices of which are at Greenwich.

Members of the Executive Committee are Messrs. Johnsen and Dunkerley, and T. S. Duncanson, president, Moore Business Forms, Inc., Niagara Falls, N. Y.

Mrs. Meloney, who also resides in Greenwich, has been identified with the manifold business forms industry for a number of years in an administrative capacity. Prior to the BFI, she headed other national trade groups and engaged in advertising and promotion for international and American daily newspapers.

Carter Rice Elects Two Directors

Carter Rice Storrs & Bement, Inc., Boston, Mass., has announced the election of Luther E. Stanhope and George V. Stone to membership on the board of directors. They join J. O. Bulkley, P. M. Jones, and C. H. Reeves in the top management of this 90-year-old organization.

Mr. Stanhope joined the company in 1945. In 1952 he left to become vice president and manager of the Narragansett Paper Co., of Providence, but in 1958 he rejoined the organization as assistant to the president. In 1959 he was elected executive vice president.

Mr. Stone in 1938 joined the company as its Western Massachusetts representative. After three years in the Navy during the war, he returned to the Springfield office and in 1951 was made manager of the New York office and elected vice president of the company.

Narrow Fabric Appoints Vice President-Sales

Appointment of Thomas M. Fry as vice president of the Narrow Fabric Co., Reading, Pa., and of its paper-processing division, Wyomissing Paper Products, has been announced.

In his new position, Mr. Fry will have sales and administrative responsibilities in connection with both companies. He has been with The Narrow Fabric Co. for 10 years and assistant secretary since 1953.

E. S. & A. Robinson Names Technical Director

E. S. & A. Robinson (Canada), Ltd., has announced the appointment of W. G. Reid as technical director of the compony. Mr. Reid has been associated with the packaging industry in the technical field for many years both in the U. S. and Canada.

Clarke Heads H. P. Smith Finance Division

F. Russell Clarke, formerly controller, has been named treasurer of H. P. Smith Paper Co., Chicago, manufacturer of protective packaging and covering materials.

Export Potential, Marketing Aims and Fiscal Improvement . . .

principal topics discussed by the industry's business groups during annual Paper Week Meetings:

Ever-growing interest in exports was indicated by the fact that two of the most important meetings held during the convention were devoted to exports and international markets. The Tissue Ass'n. devoted one session to new marketing aims and methods. A specialist in paper industry securities as featured speaker at the U. S. Pulp Producers Meeting presented some frank home truths and how to improve our industry's earnings picture.

Highlight of the APPA Annual Dinner was the celebration of the hundredth anniversary of the Writing Paper Manufacturers Ass'n. as recounted elsewhere.

The Fiscal Picture

Lawrence K. Gessner, Senior Security Analyst for Smith, Barney & Co., was a featured speaker at the annual meeting of the United States Pulp Producers Ass'n. Mr. Gessner outlined a six-point program which might contribute to an improvement of the paper industry's earning record. Mr. Gessner's remarks are summed up elsewhere in this issue.

Mr. Gessner is former program chairman for the paper industry for the New York Society of Security Analysts. He was the first president of the Paper Industry Analysts' Group of New York.

Export Picture

The export potential of the paper industry was the theme of this year's Open Meeting of the Export Committee of APPA. Industry's export potentials were reviewed by a panel of three speakers—L. P. Turcotte, president, Puget Sound Pulp and Timber Co.; H. B. McCoy, president, Trade Relations Council of the United States, Inc.; and C. Noble, director of research, Kimberly-Clark Corp.

Mr. Turcotte spoke on the export situation in pulp; Mr. McCoy on GATT and Trade Blocs—their effects on markets; and Mr. Noble on researching foreign markets. The talks of Mr. Turcotte and Mr. Noble are summarized in later pages.

Marketing Methods

Three leading management consultants reviewed new marketing aims and methods before The Tissue Ass'n., Inc. They were Harrison M. Rainie, vice president, Stewart Dougall & Associates, Inc.; Dr. William Wachs, consultant in sales management; and Don W. Connell, vice president, Market research Corporation of America.

International Outlook

The international outlook for paper, board and pulp was the theme of this year's Open Industry Meeting of APPA. The featured speakers were R. M. Fowler, president, Canadian Pulp and Paper Ass'n.; and Dr. Robert A. Kavesh, associate professor of Economics and Finance, Graduate School of Business Administration, New York University. H. E. Whitaker, president of APPA and chairman of the board of Mead Corp. presided.

Two major steps for improving U. S.-Canadian relations were outlined by Mr. Fowler. He urged Canadians to "stop being so touchy and sensitive in our attitudes toward American investment."

And he urged American companies operating in Canada "to go to some lengths to discover what are the broad objectives of Canadian policies and what are the basic aspirations of the Canadian people."

The American company, Mr. Fowler added, must seek not only to identify itself with the aspirations of the Canadian people but to work toward furthering them.

ARTHUR E CRANE, PRESIDENT
WRITING PAPER MANUFACTURERS ASSN 122 EAST 42 ST NYK

NATIONAL TRADE ASSOCIATIONS, NOW NUMBERING OVER TWO THOUSAND, ARE VALUABLE CENTERS OF COOPERATIVE ACTIVITY AND INITIATIVE. IT IS WITH GREAT PLEASURE THAT I JOIN IN CELEBRATING THE CENTENNIAL OF ONE OF THE PIONEERS IN THIS CHARACTERISTIC AMERICAN MOVEMENT — THE WRITING PAPER MANUFACTURERS ASSOCIATION.

THE VITALITY OF YOUR ORGANIZATION AND YOUR INDUSTRY ARE ATTESTED NOT ONLY BY A CENTURY OF USEFUL SERVICE, BUT ALSO BY THE FACT THAT SEVERAL OF YOUR CURRENT MEMBER FIRMS WERE ALSO AMONG YOUR FOUNDERS.

CONGRATULATIONS AND BEST WISHES FOR CONTINUED PROGRESS IN THE CHALLENGING SECOND CENTURY OF YOUR ASSOCIATION'S LIFE

JOHN F KENNEDY.
THE WHITE HOUSE WASHINGTON DC

The Export Situation in Pulp

L. P. Turcotte,
President,
Puget Sound Pulp and Timber Co.

The subject of woodpulp export is always an interesting one and is one with which I am slightly familiar as our company has exported woodpulp to all parts of the world for the past 35 years. There is not much point in spending time on statistics of exports of American-made woodpulp as these have been and are available to all of you through APPA or the U. S. Pulp Producers' Association, as well as the Department of Commerce. Also 1961 projections have been made by these same sources.

Tremendous Growth

Suffice it to say that the export market for pulp has grown tremendously in tonnage in the last two years to the point that in excess of 1,100,000 tons were exported from the U. S. in 1960, twice what exports were in 1958, and 1961 will in all probability be close to the 1960 figures—up or down by a narrow margin. Export markets are now taking about 37 per cent of the total U. S. market pulp sales. In 1950 this figure was only six per cent. This situation has been most helpful in absorbing part of the over-capacity existing in the domestic pulp industry and without this upsurge in exports, the pulp segment of the industry could have been much more depressed than it is.

Financial Rewards

While the volume of exports has been excellent and helpful, the financial rewards from this export business are far from satisfactory or reassuring. Some markets such as The United Kingdom and the Continent have shown some steadiness, while in some other markets it can only be said that the situation is chaotic and if anyone believes that a situation of this kind can continue for very long without affecting the stable market, he is just whistling in the dark.

What is Ahead?

Perhaps we should take a look at what is ahead in the export field, and I would do this by some observations which may help only in getting a clearer prospective:

Will the demand for imported U. S. woodpulp in The United Kingdom and the Continent remain at the present level or increase or decrease? And who is going to supply the increased pulp demands of these countries?

The answer is that it will depend on which of the two large supplying areas (Scandinavia and North America) are in the best position to supply this demand.

All present requirements of woodpulp to the World markets have been supplied without any trouble by the Scandinavian and North American production and we must keep in mind the projected new capacity entering into the markets in the next two to four years. Canada will be in a position to supply a substantial new tonnage of market pulp probably in the neighborhood of 600,000 tons. Domestic U. S. supply is being increased by approximately 650,000 tons—or perhaps more—of market pulp.

Scheduled increases in the Scandinavian Countries are reported to be in the neighborhood of two million tons in the market pulp category, although this may be revised to about 1,500,000 tons.

Expansion Elsewhere

Many other countries in the Far East, Africa, South America, etc., are expanding their pulp producing capacities and some export markets will be closed or partially closed to former suppliers as these countries will, by tariffs, taxation or in other ways, protect these new pulp ventures, whether they are economically sound or not. There are import taxes in existence on imported woodpulp as high as $90 per ton. Considering all of these projected expansions in woodpulp production all over the world, it is difficult to generate too much export optimism for the near future, although if we wish to consider the longer range picture, many opportunities in the export markets will materialize.

In addition to the above-mentioned expansions of woodpulp production, there is always the unknown quantities of pulp available for export from integrated U. S. Pulp and Paper Operations, which usually show up when U. S. demand for paper and paperboard products falls off.

So one might conjecture that both domestic and foreign consumption of paper and paperboard and other fiber products must increase at substantial rates if the present and near future pulp capacity is to be absorbed at an economical level.

Other Important Questions

Will I. C. A. Funds continue to be available for pulp exports? The tonnage in this category has been substantial, and if these funds were reduced or cut off, this would have an unfavorable effect on Exports.

There are dollar problems in certain areas which also could affect exports.

Always before us are political problems impossible to forecast—that would affect the export field.

These are some of the questions to be considered relating to exports. There are no doubt many others, but as I mentioned earlier, the financial rewards leave a lot to be desired—and this merits the careful consideration of the Industry engaged in the export field, otherwise we may be headed for more trouble.

In conclusion I would say the volume of exports is very helpful at this time and should continue at a healthy pace for the next year at least. Woodpulp is a world commodity. One cannot for very long depress certain markets without affecting all markets, bringing reprisals from other suppliers and affecting adversely the pulp and paper business as a whole.

Researching Foreign Markets

Carl E. Noble,
Director of Research,
Kimberly-Clark Corporation

It is exciting to research foreign markets learning more about the people, their customs, markets, products, methods of communication. Every country offers a surprise and has some unique features. In the small continent of Europe, the different languages, traditions, economic conditions, laws, and many other factors say that a common market does not exist in either the Inner-Six or Outer-Seven. In a very good article in the January 30 issue of Advertising Age, Albert Stridsberg described how deodorants are in a different stage of evolution in different countries in Europe. "Practically everyone in Sweden uses a deodorant as does a majority of the population in Holland. But less than 10 per cent of the women use a deodorant in Belgium and even fewer in France. The advertising approach that builds frequent use, frequent purchase and greater consumption per use in Sweden would send many a French woman raging away, or would meet with flat, stony-eyed moral disapproval from others." Yes, it is safer to assume that differences do exist from country to country.

In spite of these vast differences, I agree with a statement by C. R. Patterson of Upjohn International. "It has been our experience that the basic principles of good marketing research are as valid in international operations as they are in domestic operations and can be carried over intact." *

What are these basic marketing research principles, and in particular what is the approach we use in investigating new business opportunities in the foreign markets? First, what is Marketing Research?

There are many definitions of marketing research. Charles F. Kettering, famous General Motors vice president, stated that research is a continuous constructive discontent with everything, a never-ending open-minded curiosity into why things are as they are and what can be done to improve them. We believe that our future depends upon this constructive search for improvement and new opportunities.

Now to review foreign markets . . .

The first step is a careful investigation and analysis of new markets. As much information as possible is obtained through the available and relatively cheap secondary sources such as government and industry statistics, special publications by trade magazines, and books are a good source in many foreign countries. Some of them are unusual sources when you begin a systematic search. It is difficult to secure good secondary data in many of the foreign countries. Nevertheless, it is worthwhile to explore the secondary source for valuable information and for guidance to further research. Throughout the study of these foreign markets, we look for points listed in Table 1.

We talk with the consumers in person, by telephone and by mail to learn their true needs, attitudes and aspirations. We sometimes make observations in stores. We use various disciplines all the way from the so-called rigorous mathematics to the more qualitative behavioral sciences. The attempt is to select the method or discipline which is best suited to the problem. For example, motivation research has added much to our marketing know-how and we do not hesitate to use it in many cases. Yet it, like every other marketing research technique with which I am familiar, has limitations and is not the cure for all of our ills.

We have called upon the more exact sciences to aid in the solution of our marketing problems. Let me mention a classic example—**(Birthday Problem).** This problem is simple in comparison to many of the intricate marketing situations we often face. There is a place for mathematics as an aid to our judgment in marketing; yet blind adherence to quantification can be misleading.

We must be aware of the entire marketing mix. Advertising is only one of the many factors which contribute to sales. Even the all-important quality product is a necessary but not a sufficient condition for success in the market place. Some of the most successful companies both in the United States and abroad have been companies which have depended primarily upon innovations in advertising, promotion, package design and selling rather than upon major innovations in product.

With respect to export we must be mindful of the gap in labor cost between ours and that of other countries which are leading paper producers. Their lower over-all costs and proximity to the market make competition severe for American paper products; yet these handicaps can often be overcome by good salesmanship and preference for the U. S. quality product. Above all we must be aware of the consumer's needs and be understanding, cooperative, consistent, and at the same time flexible. Flexibility is a must in world markets which all too often are affected by unstable political and economic conditions.

TABLE I—STUDY OF FOREIGN MARKETS

A. Population
B. Size, distribution and rate of growth of per capita income.
C. Size and Rate of Growth of Markets.
D. Government Restrictions — Custom duties.
E. Trade restrictions—cartels, etc.
F. Type and Strength of Wholesale Dealers
G. Type of Retail Outlets.
H. Prices, discounts, and trade margins.
I. Consumer satisfaction with Leading Brands.
   1. Complaints with present brands
   2. Segment of market not being satisfied
J. Analysis of Leading Brands.
   1. Quality of Product
   2. Marketing Strategy
      a. type and expenditures in advertising
      b. methods of selling, sales policies, pricing problems
      c. methods of promoting product
      d. strength of sales force and acceptance by trial
      e. methods of combating competition
   3. Manufacturing and Technical Know-How and Facilities
   4. Estimated Profit and Loss
K. Kimberly-Clark's Ability to Enter Market.
   1. Development of product
   2. Manufacturing Know-How and Facilities
   3. Marketing Know-How and Facilities
      a. Advertising, promotion and selling
   4. Forecasts
      a. sales
      b. cost of production, distribution and marketing
      c. capital investment
      d. return on investment

* Market Research in International Operations, AMA Management Report No. 53.

An Outsider Looking In

The author sees six good points about our industry and one bad point—low profits. He presents six factors which might contribute to improving our earnings.

Lawrence K. Gessner

Let's look at your very large and important industry. As with a look at any industry, the major factors that outsiders think about are perhaps seven in number. I think you will agree with me in my conclusion that the paper industry is in a pretty fortunate position with respect to most of these basic factors.

First—Your raw material position is excellent. Pulp wood today is abundant, self-replenishing and relatively cheap. Your forestry programs are paying off and waste paper is in good supply. What other major producing industry is so lucky concerning its raw materials?

Second—Your productive facilities are large, diversified, highly automated and integrated to a good degree. There is a large amount of new and modernized plant and machinery. You have spent hundreds of millions of dollars on plant in recent years and you turn out quality products with excellent operating efficiency.

Third—In regard to another vital ingredient—labor—you are also in good shape. Your labor cost is about average for all industry and your serious efforts toward establishing good labor relations over the years have produced a record of extraordinarily few real labor problems.

Yes, I would say that in terms of physical facilities and people your position is excellent.

Excerpts from a talk by Lawrence K. Gessner, Senior Security Analyst, Smith, Barney & Co., at the annual meeting of the United States Pulp Producers Assn.

Fourth—The product itself—paper, in whatever form—is a truly unique item. It is inexpensive, it is highly adaptable, and it is generally used and thrown away. You do not have the inherent problems of the durable goods producers.

Fifth—How about the markets for paper? Here you shine again. The increasing per capita consumption of paper superimposed on a rising population is a story in itself. Paper is indeed the most widely used manmade product in the number of places and ways used. It permeates our entire economic existence. What more can you ask?

Sixth—Because of all these factors, and others, your industry has experienced an excellent growth in sales. In the last ten years the annual compound rate of sales growth has been 5.7 per cent. Quite a large number of progressive companies have done even better than this. Also, contrary to popular belief, the paper industry possesses greater productive stability than overall industrial production. While it is susceptible to short-run inventory cycles, as are most major industries, paper production has a consistently better record in recession years than does industrial production as measured by the F.R.B. Index. Beginning with the 1930 depression this phenomenon has been operative in all seven recession periods.

In summary, then, you are in a very enviable industry position regarding the really basic factors of raw materials, productive facilities, labor, product, markets, and sales growth and stability. Some of these conditions are a result of keen industry effort, others are fortuitous. Regardless of the origin, however, they should have enabled the industry to demonstrate progress in our **seventh** fundamental—corporate earnings.

But, as Hamlet said, "There's the rub." The paper industry's earnings record, in my book is quite poor. There is no sense in providing voluminous statistics. You are well aware of the fact that in the last ten years total net profits for the paper industry have grown at only eight tenths of one per cent annually. Inflation alone during this period was growing at 2.5 per cent. The earnings per share record, a much better test, is worse.

(Mr. Gessner suggested the six following factors that might contribute to an improvement in the earning record of our industry.)

- You have already cut costs because of economic necessity. You now know you can operate successfully without the "fluff." You should keep these costs down even when the cycle turns up so that the same profit margin pressure will be lessened in the coming years.

- Much more attention, time, effort, and money should be invested in research and product development. In research the key word is *invest*, not spend.

- When you top management people consider expansion, consider that perhaps you aren't that much better or smarter than your competitors. There's no certainty that you can get his market. He's awake too and will fight back.

- As managers you must consider capital expenditures mainly in terms of return on the dollar invested. You must, therefore, be increasingly tough in your estimates in terms of degree of certainty and magnitude of return.

- If integration really improves your situation in an important way then seek to achieve it—if not, forget it.

- And last, if these policies of leadership are followed, the additional money you need will be available when you need it because Wall Street will then be convinced, as I most certainly am, that here is an industry with a real and lasting future.

Pulpwood Production Developments at Home and Abroad Dissected at APA

Two open-industry sessions related to current developments in pulpwood production methods and market, both at home and abroad, formed the core of the annual meeting of the American Pulpwood Association. Significant improvements were also reported in wood handling, logging, safety, transportation, and utilization at the five day meetings. Following are portions of remarks made by several of the delegates to the speakers' podium.

C. R. Silversides of Abitibi Power and Paper Co., Ltd., told how pulpwood production methods in Canada are unique to the physical, economic, social and political conditions peculiar to the country. In the main, pulpwood production in Canada is by means of large scale operations on timber limits leased from the various Provincial Governments. The Federal Government controls very little forest land. There is a strong trend to increased mechanization, and the horse is disappearing. Only 30 per cent of productive forest land in Canada is occupied under license, lease, or private ownership. There is an indicated over-supply of wood. Historically, pulpwood operations have been cyclic, governed by climate conditions. Today, with machines and methods made possible by technological developments, year round operation is made possible.

Situation in USSR

Dr. Alex J. Panshin of Michigan State University, discusses the situation in the USSR where forest resources are estimated at 2812 billion cubic feet of timber, compared with 548 billion cubic feet in the U. S. However, 77 per cent of the total USSR volume is in sparsely populated Asian regions. While 86 per cent of the volume is in softwood species, 38 per cent of it is larch which to date has only been used experimentally for pulping. Present consumption of timber for pulping is approximately 6 million cords. Per capita consumption of paper and board in Russia is about 31 pounds versus 405 in the U. S. A. Labor productivity is very low; .36 cords per man day according to figures published in 1955. The trend is to complete mechanization of woods operations and piece rate and bonus pay arrangements to increase production. Considerable quantities of reed and straw are planned to be used in the forest deficient areas.

Stumpage and pulpwood prices are established by a central government agency and bear little relationship to actual costs. The threat of "dumping" pulpwood products on world markets at unrealistic prices, if politically expedient, is ever present.

Robert E. O'Connor, executive secretary of APPA covered the subject for Asia.

At a Brazilian Mill

A. C. Shaw of Champion Paper and Fibre Co. discussed their methods and problems in procuring eucalyptus wood for the new bleached kraft mill of Champion's Brazilian subsidiary at Mogi Guacu, Sao Paulo, Brazil. The mill is located 100 miles north of the city of Sao Paulo at an elevation of 1700 feet which accounts for a climate that is milder in winter and cooler in summer than our southern states. All of the eucalyptus wood being used is plantation grown. Growth rates range from 1 to 7 cords per acre per year with individual cuts running from 5 to 40 cords per acre. The best cutters only produce 1 to 1½ cords per day. Axes are used mostly; the company is having difficulty in introducing buck saws. Practically all of the wood is transported from stump piles to mill by trucks. Mechanization other than a few bulldozers for road building is hampered by the low wage rates, lack of skilled and professional workers and excessive cost of machinery.

Lowell Besley, chairman, Woodlands Research Department, Pulp and Paper Research Institute of Canada, listed latest developments in Canadian woodlands research. He detailed some of the studies now being conducted on the forces involved in logging operations including weights of trees, skidding forces, bearing pressures of forest floors, pulpwood holding grounds and pipeline transport of chips.

Pulpwood Production in relation to withdrawing of commercial forest lands from timber production for other uses, was discussed by Arthur W. Greeley, U. S. Forest Service.

There is not enough land in the United States to meet all the demands which people may have for special "set-asides." Multiple use management of wild lands, both privately-and-publicly-owned, is one effective way to meet the future pressure of population on the country's land resources, he said.

Donald D. Stevenson, Buckeye Cellulose Corp., described the aims and programs of TAPPI's Forest Biology Committee. Since its inception in 1958, the Committee has been working on a bibliography of the world literature dealing with environmental and genetic influences on quality of pulpwood. A second project has been a compilation of current information on the ways in which properties of pulpwood are reflected in processing and in properties of paper.

Low Inventory Popular

R. R. Edgar, Bowaters Southern Paper Corp. said that there are no shortcuts to establishing a flow of fresh wood to a pulp mill in sufficient quantity and quality to meet the current requirements of that mill. Under these circumstances low wood inventory and a continuous supply of fresh wood is the order of the day. To achieve a continuous supply at Bowaters, specific steps are being taken which include the development of mechanized woodyards, the "big stick" loader, surveys among producers and forest resource surveys.

Chip production in all regions of the United States was described in detail in a report by T. N. Baker, St. Regis Paper Co., of the results of a national survey. Also described were the various processes and equipment that are being used to debark and chip the raw material and the facilities used to transport it. The economics of the Vac-Sink Process, chip storage and chip handling equipment were pointed out.

During the Forest Policy Forum:

J. R. Kimberly, chairman of the board, Kimberly-Clark Corp., discussed the long range trends of the pulp and paper industry.

T. T. Dunn, vice president, Union Bag-Camp Paper Corp., described the type of woodlands organizations which will be required to meet future industry demands.

J. L. Tower, vice president, Inter-

national Paper Co., explained the relationship of woodlands organizations to corporate public relations.

J. W. McSwiney, vice president, The Mead Corp., pointed out the long-range relationships of pulpwood costs to the rate of return on products produced.

Speaking at the Annual Luncheon, Dr. M. O. Sawyer, associate professor of Citizenship and Social Science Programs at Syracuse University, gave his impressions of how the "New Frontier" policies of the Kennedy Administration are likely to affect industry. He also commented on what reactions industry might consider as plans and policies of the new administration unfold.

W. S. Bromley, executive secretary of APA, noted that meetings of the Forest Management, Safety and Training and Technical Committees were held to discuss new and proposed developments in their respective fields.

Chairmen of the various committees were: D. B. Demeritt, Dead River Co., Bangor, Me.—Forest Management; C. S. Herr, Brown Co., Berlin, N. H.,—Safety and Training; and S. K. Hudson, Container Corp. of America, Brewton, Ala.,—Technical Programs. Meetings of the legislative committee, chairmanned by K. A. Swenning, Scott Paper Co., the statistics committee, chairmanned by R. C. Barienbrock, The Mead Corp. were also held.

Other APA activities during the annual meeting included a President's Reception and Annual Dinner. At the dinner, G. W. Amidon, Minnesota & Ontario Paper Co. was presented an honorary plaque as APA past president, 1958-1960. Chairmen of the various sessions were: D. E. Hess, APA president (The Gladfelter Pulpwood Co.); Paul Dunn, St. Regis Paper Co.; and A. W. Nelson, Jr., Champion Paper & Fibre Co.

Representatives of pulp and paper companies sponsoring the "Southern Pulpwood Production Research Project" met with representatives of Battelle Memorial Institute to discuss progress of the project to date.

Unbleached Kraft Paper Review—1960 Follows Cycle

J. B. Cowie,
President,
Kraft Paper Assn., Inc.

A recession struck and took American industry by surprise late in 1960. The unbleached kraft paper manufacturing industry, like so many other industries in the United States, had begun the year with a burst of optimism and enthusiasm. The "soaring sixties," however, maintained their booming activity for kraft paper only through the middle of May. For the balance of 1960, the industry witnessed a steady decline in orders with the result that whereas the industry had operated at capacity in May it operated at less than 75% of capacity toward the end of the year.

Shrinkage General

This shrinkage in business was general throughout the wrapping, shipping sack and other converting grades of kraft paper. Only in those bag papers which are converted into grocers bags and sacks was 1960 business at new record volume levels. This was a natural result of the record sales by grocery stores in every month of 1960 over the same months in the past. This grocers bag paper business was sufficiently strong in volume to offset most of the volume losses elsewhere with the result that the industry shipped approximately 2,840,000 tons of unbleached kraft paper in 1960, only 1½% less than that of the record year of 1959. This was an exceptionally good achievement, all things considered.

The Author

The volume story unfortunately does not present the whole picture. During the last half of the year when business was declining, the industry's file of orders was sharply reduced while its inventories were simultaneously increased. As a result, the year ended with very strong competition and a certain amount of price weakness. This condition was prevalent too in the grocers bag field where business had been heavy.

Follows Business Cycle

Kraft paper is basically a packaging paper. The packages into which it is converted range from the previously mentioned grocers bags for the housewife to all kinds of wrapping papers, bags and shipping sacks for retail trade, construction, agriculture, the chemical industry, the food industry, etc. It also serves a great many industrial uses in the form of waterproof papers, tapes and specialty papers. Thus, prosperity for the kraft paper industry rises and falls with the business cycle. What direction this will take throughout 1961 is anyone's guess. Kraft paper as a service product to industry will thrive or suffer depending upon the direction of the business tide. Accepting these conditions as determining, the kraft paper manufacturers still look upon 1961 as a year with promise. The industry's customers have depleted their inventories, the keen competition of the recent past has eased and there has been a noticeable improvement in the industry's operating statistics. 1961 business should exceed that of 1960 by a small margin. If this is evenly spread across the year, as may well be the case, the industry will have a good year.

Most members of the industry have learned the importance of market and product research. They are working separately and collectively through their Association's research and development program to broaden the use of kraft paper. These efforts should bear fruit as the program matures. As with so many other industries today, the hopes for the future lie in finding new applications for our products and more users. The growth in population is providing the latter, the industry's ingenuity must provide the former.

Significant Developments at TAPPI'S Annual Meeting

TAPPI'S 46th Annual Meeting, held February 20-23 in New York, was highlighted by election of a new president, presentation of the 1961 TAPPI Medal and 31 technical sessions during which over 100 papers dealing with research and technology in our industry were given. The meeting was well attended by nearly 3,000 of the paper industry's top people, some of whom were delayed in arrival, then frustrated in departure, by a strike which tied the nation's airlines system in knots.

The election of new TAPPI officers by letter ballot was announced to the membership at this meeting by the retiring TAPPI president, James R. Lientz, vice president, Union Bag-Camp Paper Corp. Harold M. Annis, vice president in charge of research, Oxford Paper Co. was elected president for a one-year term, succeeding Mr. Lientz who held the post for the past two years. Mr. Annis had served as vice president of TAPPI for the past two years. The new vice president of the Association is Dr. John C. Wollwage, general manager of manufacturing process, Kimberly-Clark Corp.

Mr. Annis joined TAPPI in 1932 and served on numerous committees and divisions, becoming a member of the Association's Executive Committee in 1956. Dr. Wollwage became a member of TAPPI in 1936 and has also served as local section chairman, division chairman, and member of the Executive Committee.

Four new members were elected to the Executive Committee at this time, to serve three year terms, through 1964: William H. Aiken, manager of research, Union Bag-Camp; Paul W. Bartholomew, technical director, Paper and Insulite Divisions, Minnesota and Ontario Paper Co.; Glenn C. Kimble, manager, Technical Division, Union Bag-Camp; and W. P. Lawrence, director of research, Champion Paper and Fibre Co.

Recapping the past year's progress during the meeting, Mr. Lientz, retiring president, reported a five per cent gain in membership for a total of 10,623 members. Significantly, one quarter of these members live outside the U. S. Mr. Lientz also pointed out that despite a total income of $820,000 last year, TAPPI is operating at a $39,000 deficit.

Harold M. Annis

John C. Wollwage

Chairmen Honored

Several retiring Technical Committee chairmen were honored with Certificates of Appreciation during the Meeting. The recipients were: K. W. Britt, Scott Paper Co., former chairman of the Wet Strength and Interfiber Bonding Committee; H. G. Ingraham, Charles T. Main, Inc., former chairman of the Engineering Data Committee; W. H. Kennedy, Black-Clawson Co., former chairman of the Fourdrinier Committee; C. A. Morton, Alden Press, former chairman of the Graphic Arts Committee; S. R. Parsons, Consolidated W. P. and P., former chairman, Mechanical Pulping Committee; W. N. Stickel, Texon, Inc., former chairman of the Plastics Committee; J. E. Wilber, St. Regis, chairman, Coating Council.

TAPPI Medal

The recipient of the 1961 TAPPI Medal was G. H. Chidester, chief of the U. S. Division of Pulp and Paper, U. S. Forest Products Laboratory, who was selected for this honor on the basis of his significant contributions to the progress of the industry. The medal was presented by Dr. R. J. Seidl, director of Central Research Laboratory, Simpson Timber Company.

Mr. Chidester was born in Hastings, Mich. and graduated from the University of Michigan in 1920. His work on the utilization of wood and numerous other exhaustive research projects are recognized in countries throughout the world as basic references on the manufacture of pulp and paper. A man of international stature in his field, he is also in large part responsible for the development of men who have served under him—a number of whom now hold increasingly responsible technical positions in major pulp and paper and related companies. He is the joint holder of two patents, and during the course of his career has had 57 papers published.

Production Applications of Fourdrinier Foils

Capabilities of fourdrinier foils were shown in a description of a number of field applications given by H. E. Dunlap of the Lodding Engineering Corp. Trial applications of foils on fourdriniers producing glassine, book, magazine, newsprint, carbon, toweling and saturating grades have been made. These machines operate at speeds ranging from 100 to 2,000 feet per minute and have wires 40 to 276 inches wide.

Evaluations show excellent results are being obtained on slow to medi-

um speed applications on all grades. Satisfactory results are also being obtained on medium draining furnishes at speeds to 2,000 feet per minute. High speed applications involving very fine draining stocks have produced excessive drainage. Foils, properly designed and applied, have improved formation and increased drainage capacity of a number of fourdriniers.

Foil efficiency is affected by numerous factors. Machine speed, wire and mat drainage resistance, stock freeness and consistency are important design considerations. Foil width, front wire supporting area, surface smoothness, and degree of surface divergence are major design variables. These factors become increasingly critical as machine speeds increase and stocks become freer.

A single foil has a visual similarity to a deflector or drainage board of the style used between table rolls. Both consist of a beam on which a replaceable wire supporting strip is mounted. The front edge of this strip is usually beveled to produce a scraping or doctoring operation on the underside of the wire.

Whereas the drainage board is given a totally flat top surface; the foil has a relatively narrow flat portion of its front top surface supporting the wire. The remainder of the upper foil surface is then made to diverge from the plane of wire travel.

Both foils and deflectors are used to support the wire and to remove excess water from the underside of the wire. Spray and discharge from adjacent machine elements is also deflected away from the wire and into save-all pans.

A major and important difference between the two, however, is the ability of a foil to develop a vacuum in somewhat the same manner as a table roll. This causes water from above the wire to drain through and maintain the film continuity. A foil thus performs the doctoring and the deflecting functions of a drainage board plus the drainage producing functions of a table roll.

The beveled front edge of a foil effectively removes water from the underside of the wire. It, further, does not present an opening which would lead to the formation of a frontal pressure area and resultant pressure ridges. Sheet formation may, therefore, be improved when foils replace table rolls or combinations of table rolls and drainage boards. Foils are designed to be used in a series, totally replacing all table rolls and all drainage boards normally employed in that particular portion of the fourdrinier. Foils may usually

G. H. Chidester of Forest Products Lab. being awarded 1961 TAPPI Medal by R. J. Seidl, Simpson Timber Co.

be spaced on closer intervals than required for suitable table rolls. Wire sag is, therefore, reduced and a greater area of wire is utilized for active drainage.

The application of foils to operating fourdriniers may be summarized in the following statements:

1. Foils should be applied only where specific problems exist. Foil design and location may then be logically applied to achieve desired results.

2. No less than two foils in sequence should be used for evaluation purposes. Drainage occurring at the rear of the first foil plus that achieved by the front of the second measures the drainage efficiency of the first unit.

3. The last foil of a series must be followed by a drainage board to prevent excessive flooding of the front of a following roll.

4. Drainage efficiencies of foils should not be compared directly to that of table rolls. Relative practical spacing of foils and rolls must also be considered to determine the drainage achieved thru a unit length of wire.

5. Foils may improve formation by:

a. Elimination of table roll pressure ridges.

b. Increased fourdrinier drainage capacity may permit reduction of head box consistency.

6. Relative effective drainage produced by foils directly compared to rolls varies with machine speed.

a. Individual foils may produce the greater effective drainage at slow speeds.

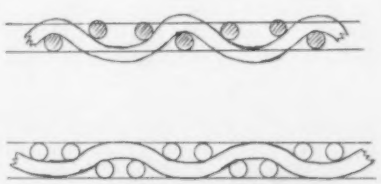
b. Individual rolls generally produce the greater effective drainage at high speed.

7. Smooth surfaced foils create less turbulence and produce greater drainage than rough surfaced foils.

8. Adjustability of surface divergence becomes progressively more critical with increase of machine speed and stock freeness.

New Fourdrinier Wire Weave Improves Formation, Cuts Costs

The development of an entirely new weave of fourdrinier wire, capable of producing improved paper finishes and materially improving basic paper characteristics was revealed by James E. Watson, president and general manager of Wisconsin Wire Works. He reported the results of a research program undertaken to study the distribution of fibers on a fourdrinier wire and the resulting flow of water through these fibers as they built up on the wire. The objective of the program was to improve the surface characteristics of the sheet, as well as its physical properties. In particular, a sheet less directional in its make-up was sought.



At top, conventional fourdrinier wire weave. Bottom, new full twill wire weave.

The conventional fourdrinier wire weave, commonly spoken of as "Semi-Twill", is a 3-shaft uneven twill. One of its basic charactistics are sharp warp knuckles on the paper-making side of the wire on a diagonal pattern. This leaves the well-known wire mark as the fibers tend to bundle and align themselves in the direction of flow in the natural valleys of the mesh itself.

It was reasoned that, if the weave of the fourdrinier could be altered so that the fibers descending in a random distribution could be held in that position as they contacted and built up on the surface of the wire, then the surface of the resulting sheet must of necessity be more level and uniform.

To produce a weave of these characteristics, an entirely new approach to weaving had be be made. The new

weave was to be a four-shaft even twill, often spoken of as a "full twill."

This part of the research seemed to satisfy the original objective and if this same desirable top surface could be duplicated on the bottom side, then several important improvements were likely to be made. Resistance to wear and fatigue would be increased. Less edge cracking could be expected. Power requirements would be reduced through less friction.

Field tests thus far have confirmed the following:

1. The level surface on the top side of the wire produces more uniform finishes.
2. Formation is improved.
3. Fiber and filler retention is materially increased.
4. Drainage has increased.
5. Cross-machine strength has been substantially increased in some instances.
6. These new wires will not score or freeze to the suction boxes.
7. They do not need to oscillate.
8. Power requirements are reduced.
9. Edge cracking has been greatly reduced, and eliminated in some instances.
10. Wire life has been substantially increased.

Less Sawdust, Better Cooking Yields Result of New Chipper Design

In an attempt to reduce sawdust, slivers, and oversize chips to an absolute minimum, the D. J. Murray Manufacturing Co. has developed a new chipper into which has been incorporated an offset V-type spout, the Uni-Chip helicoidal surface, and up to 15 knives with higher disk r.p.m. All this by way of a paper written by R. M. Buechler and co-authored by associates L. L. Duncan and J. R. Haller.

The offset "V" supports the log so that there is no fish-tailing or bouncing by the log. The new spout also allows sticks of smaller diameters to be held in closer to the hub of the disk, thus producing more multi-knife cuts. The Uni-Chip helicoidal surface utilizes standard straight knives. No warping or twisting is required, and standard grinding procedures are permitted. Knife covers are machined in two planes, while the wear plates are installed in a third plane. Thus, this helicoidal surface allows logs to feed in gradually; gives better support to the logs; and prevents bruising and subsequent production of sawdust. Wear plates and knife cover have been reported to last four times as long (over seven months as opposed to 6 weeks to 2 months previously), with Uni-Chip surface.

The problem of bruised chips and sawdust production was further aggravated by the rate of drop between the knives from the inside towards the hub, and to the outside towards the periphery of the knives. The helicoidal surface insures proper distribution of unit pressures between the log and the disks at the time of cutting. It has also permitted the use of 10-12 and 15 knife disks to be operated at higher speeds.

Further testimony on the new chipper shows that fewer oversize chips result, and that chips are more uniformly within the 5/8-inch range. Thus, one obtains greater cooking yields.

But, the authors hasten to add, only by proper maintenance of the best and most advanced type of chipper, can one expect to obtain quality chip consistency.

How Dyes Affect Opacity of Paper

In a report by Mason Hayek, Albert S. Deutsch and Joseph P. Neary of E. I. du Pont de Nemours, the effect of dyes and colored pigments on opacity was described. The relationships between hue, opacity and brightness was discussed for tinted, pastel and deep shades.

There is growing interest in the papermaking and printing industries in low weight papers with high opacity. The trend toward higher postage rates on publications is partly responsible for this, making it desirable to reduce the basis weight of printing papers without loss of opacity. Increased opacity for a given fiber furnish can be achieved by the use of additional pigment filler or a filler of increased refractive index or by the use of dyes.

Some of the points brought out in the report were:

- For those dyes which have a significant effect on opacity, the greatest increase in opacity with increasing dye concentration occurs at low concentrations (tinted and pastel shades). Among the specific dyes tested, the most effective for the production of dry opacity were blacks, violet, blues and green. Reds caused a somewhat lesser increase in opacity, and orange and yellow were least effective.
- The data show that the most important factor for the increase of opacity is the hue of the dye.
- Since opacity is ultimately appreciated visually, as by a measure of the show-through of printing, it is to be expected that those dyes which absorb light in the wavelength region of greatest visual sensitivity will have the greatest opacifying power.
- In general dull dyes will have somewhat greater opacifying power than bright dyes of similar hue. The effect of dullness is less important than the effect of hue. Of course, the choice of dyes for tints or pastel shades must be determined by the shade that is desired as well as by opacity.
- Pigment colors are commonly thought to opacify paper by two mechanisms, light absorption and light scattering. But at the concentrations of colors required for tints to pastel shades, light scattering must be negligible because pigment colors showed no advantage over soluble dyes. Moreover, organic pigments are known to have indices of refraction too low to contribute significant light scattering.
- It is useful to note how the addition of dyes to increase opacity changes the brightness of paper. Increasing opacity with the use of dyes always causes a reduction of papermaker's brightness. But, except for blacks, the dyes which cause the greatest increases in opacity cause the least reduction in brightness.
- For the quantities of dyes used in tinted whites, the data show that the addition of a violet, blue or black increases opacity by 2 or 3 points from an initial 70 (or slightly less increase, probably, from a higher initial opacity). The choice of dye type (acid, direct or pigment) has no significance. The least reduction of measured brightness is obtained with blues and violets.

These conclusions for tinted white papers are important in the field of book papers, where cream-colored paper is generally used now. In the pastel area, properly selected dyes can be used to produce printing papers having increased opacity.

Advance in Design of Digester Linings

Lining existing digesters in the field with high alloy stainless steel and without welding the stainless lining to the carbon steel shell was reported on by R. A. Menges, Vulcan-Cincinnati, and A. H. Ahlstrom and I. Olsson, A. B. Nordstroms Linbanor, Stockholm, Sweden.

In 1951, after considerable development work, the entire brick lining of a 250 cubic meter sulfite digester in Sweden was removed and replaced with a thin skin of high alloy stainless steel. The Swedish inventors used an unorthodox approach in installing the lining, now called the Kopparfors Lining. The stainless steel sheets were not welded to the carbon steel shell. Instead, stainless sheet was welded to stainless sheet with the liner anchored to the digester at a few key points. In order to hold this stainless sheathing flush to the wall of the digester, a vacuum was maintained between the lining and the wall.

To date, 25 digester, five hot acid tanks, and five digester domes have been lined with the Kopparfors Lining in eight countries: Sweden, Austria, Germany, Finland, Morocco, South Africa, Japan, and the U.S. The sizes of the digesters range from 80 cubic meters to 350 cubic meters. The sizes of the acid accumulators range from 300 cubic meters to 600 cubic meters.

Casein-Dialdehyde Starch Combine To Give Water Resistant Coatings

The irreversible insolubilization of casein by dialdehyde starch was discussed in a paper by F. B. Weakley, C. L. Mehltretter and C. E. Wrist, all of the Northern Regional Research Laboratory. Casein has been cross-linked by dialdehyde starch under various conditions to form irreversibly insoluble products. Viscosity control of the aqueous reaction mixtures was achieved by appropriate combinations of reagents and adjustment of pH. Rapid reaction and gelation occurred at pH levels above 7. An anticipated extension of the present study is the application of casein-dialdehyde starch adhesive for the preparation of water-resistant paper coatings.

Dialdehyde starch was prepared by periodic oxidation of pearl corn starch to the extent of 95 per cent of theory. The highly polymeric dialdehyde was completely dispersed in water in 10 per cent concentration by addition of 10 per cent of its dry weight of borax with agitation and heating at 73°C. for approximately 15 minutes. The casein used was a purified high nitrogen product. Dispersion was achieved by stirring in water for 15 minutes prior to addition of 10 per cent of its dry weight of borax with continued agitation for 30 minutes at room temperature. In most of the experiments the DAS and casein dispersions were combined to produce a homogenous mixture and after adjustment of pH, allowed to react at room temperature. Rapid reaction was found to occur in the pH range of 6.8 to 8.

Maximum combining capacity of the polymeric dialdehyde was 26 grams per 100 grams of casein. The cross-linked casein is practically insoluble in dilute alkalis and acid, properties which are quite different from casein and DAS. Because of this irreversible insolubility, it has potential value for use as a water resistant coating for paper. Viscosity stability of DAS-casein dispersions was achieved by appropriate combination of reagents under slightly acidic conditions. Rapid reaction and gelation occurred at pH levels above seven.

Improving Dialdehyde Starch Retention In Wet Strength Paper

Dialdehyde starch has been reported recently to improve greatly wet and dry strength of paper when applied either as a size or as a wet end additive. A paper was given by G. E. Hamerstrand, B. T. Hofreiter, C. L. Mehltretter, W. E. Schulze and D. J. Kay, all of the U. S. D. A.'s Northern Regional Research Laboratory, on the use of cationic starches as a retention aid. Previous reports had dealt with the use of alum as a retention aid. Laboratory studies showed commercially available cationic starch to be substantially better than alum for the retention of dialdehyde starch.

The lack of substantivity of dialdehyde starch to cellulose fibers in wet end addition requires a retention aid. Retention aids other than alum were sought chiefly because of high alum requirements. Cationic starch application from 0.5 to 2.5 per cent (dry pulp basis) was shown to result in efficient retention of DAS with outstanding wet and dry strength.

Laboratory Work

In the lab work dialdehyde starch was prepared by oxidation of pearl corn starch to 96 per cent of theory with periodic acid. Other starch sources including milo, wheat, waxy maize, tapioca, amylo-maize, and potato were also tried and found to be about equally effective. Optimum use conditions were established by studies of concentration and amount of stock solutions of additives employed, the sequence of their addition, and the influence of pH, time, and temperature. The amount of additive retained and the physical properties of papers made from a wide variety of pulps were determined.

Absorption of cationic starch by pulp under the conditions of handsheet formation was rapid and near quantitative after about 20 minutes. Maximum retention of DAS was obtained rapidly following addition to the cationic starch-pulp slurries. However, as contact time was increased, a gradual decline in DAS retention results with a corresponding loss in wet strength.

The retention of DAS in the pH range 2.5 and 5.5 is nearly constant. Within the pH range tested, the retention of cationic starch was unaffected.

Increasing quantities of cationic starch were proportionally effective as retention aids for DAS up to about 2.5 per cent. The retention of DAS, based on the amounts of cationic starch added, was less efficient at the higher levels of addition.

The overall performance of the DAS-cationic starch system was not significantly affected by water hardness. Dialdehyde starch, once incorporated into the formed sheets needs no special heating to effect wet strength development.

In summarizing the paper, it was noted that the advantages of cationic starch over alum as a DAS retention aid are numerous and decisive for its preferred use. The very wide applicability of DAS-cationic starches in imparting excellent wet and dry strengths properties to most all pulp types has already been shown.

Steam-Atomized Venturi Scrubber Improves Collection With No Boost in Power Used

In the brine scrubbing venturi, the greatest disadvantage lies in the relatively large amount of water that must be evaporated from the brine bleed-off to the black liquor. Therefore, it was a logical step to consider substituting black liquor as the scrubbing medium in place of the water or brine.

The ever increasing demands to lower particulate matter in stack gas demanded still further improvement of the collection efficiency of the venturi evaporator scrubber. From these studies came the steam-atomized venturi scrubber.

In January 1957, investigations were undertaken at Kaukauna, Wis., in a joint effort between the Thilmany Pulp and Paper Co. and the Babcock & Wilcox Co. The purpose was to develop a venturi scrubber having 90 per cent collection efficiency with 20 in. H_2O pressure drop, or 95 per cent for 30 in. H_2O pressure drop.

A 1/10-scale model of a 250-ton commercial unit consisting of a venturi and cyclone separator is shown in Figure 1. This test unit was installed in parallel with the existing unit at Thilmany. Flue gas was taken from the parent unit immediately in front of the venturi throat and returned to the flue system at the cyclone outlet. Both high density (approximately 60 per cent solids) and low density liquor (approximately 45 per cent solids) were available from the parent unit.

The authors, P. H. West, production manager at Thilmany with H. P. Markant and J. H. Coulter, B & W engineers, extensively described pilot plant development, then proceeded to report the following:

The Dual Manifold Venturi

To determine the benefits that could be obtained by spraying 45 per cent liquor into the venturi throat to take advantage of its low viscosity, the pilot unit was modified from a single to a dual manifold arrangement. With this arrangement, the low viscosity liquor normally sent to the cyclone sump was introduced into a separate set of headers at the throat, downstream from the recirculated liquor headers. A significant increase in collection efficiency for the same pressure drop was realized.

Since all tests had indicated that the fluid properties had a significant effect on collection efficiency and energy requirements, it was felt that if the particle size of the fluid injected into the venturi throat could be reduced, the over-all performance of the venturi could be still further improved.

In March of 1960, the 250-ton recovery unit at Thilmany was modified to include a dual manifold steam-atomized venturi in which the recirculated liquor was introduced through segmental steam-atomized headers.

The steam-atomized headers were designed with 10 steam-liquor spray jets per unit for atomizing the liquor as it entered the venturi throat. These steam atomized liquor spray jets consisted of Type 316 stainless steel nozzles screwed into a carbon steel block and manifold assembly with the steam admitted to the nozzles through holes in the block. A set of conventional splash plate headers was installed in the venturi throat section below the steam-liquor headers to distribute the low density liquor uniformly across the width of the lower throat section.

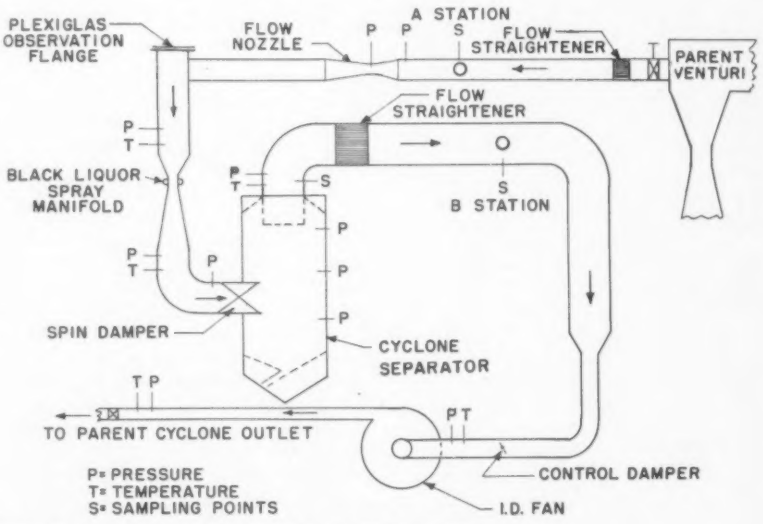


FIGURE 1: DIAGRAM OF PILOT UNIT VENTURI SCRUBBER

The Steam-Atomized Venturi

The dual manifold pilot plant arrangement was modified so that the recirculated black liquor would be steam atomized in the upstream set of headers at the venturi throat, and the makeup liquor would be introduced into the downstream set of headers.

Operating tests were run at a very low venturi differential of approximately 6 inches of water, and at an intermediate differential of approximately 20 inches. Results of these tests are shown in Table 1. The commercial results on the steam-atomized venturi were comparable to the pilot unit data in the 90 per cent efficiency range and significantly higher than those obtained with the dual manifold arrangement. At 20 inches pressure drop across the venturi throat, 70 per cent collection efficiency was obtained with the single header venturi and 90 per cent with the steam-atomized venturi. This increase of 20 per cent in efficiency was achieved by using approximately 700 lb. of steam per

TABLE I. SUMMARY OF TEST DATA STEAM-ATOMIZED VENTURI SCRUBBER

	Dual Manifold		Steam Atomized Venturi		
	Single Header	(Buckeye Cellulose)	(D. M. Bare)	(Thilmany)	
Venturi Differential—inches H_2O	30	29.5	29.1	6.3	19.5
Liquor/Gas Ratio—Gal./1000 cu. ft	10.0	9.5	6.0	5.5	6.67
Venturi Throat Velocity—Ft./sec.[a]	275	230	229.2	158.5	195.0
Atomizing Steam Flow—Lb./Hr.			797.0	1520	2180
Collection Efficiency—Percent	88	90.7	93.2	78.1	89.0

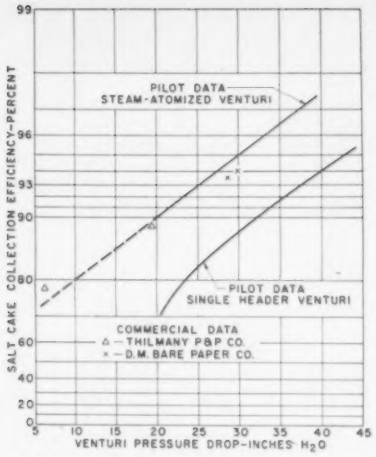


FIGURE 2: COMPARISON OF COMMERCIAL AND PILOT DATA

hour per 100 tons per day of pulp production. The atomizing steam pressure is about 40-50 p.s.i.g. at the nozzle or 10 p.s.i.g. greater than the liquor pressure. The steam-atomized venturi has been in continuous operation at Thilmany for approximately one year, and no operating problems have been experienced.

On the D. M. Bare Paper Co. unit, Roaring Springs, Pa., tests resulted in an efficiency of 94 per cent for 30-inches pressure drop.

In comparing the performance with the single header venturi, it will be seen in Figure 2 that the efficiency, through the use of dual manifolds and steam atomization, has been improved by 6 per cent at a venturi differential of 30 inches of water.

Stress Analysis and Engineering of Kopparfors Linings

Further details on the Kopparfors Linings were given in a paper by G. Cape, and A. M. Bain, Dominion Bridge Co. The Kopparfors Bag Lining is a method of protection of the inside of digesters operating under cyclic conditions of temperature and pressure, whereby large thin sheets of suitable corrosion resistant metals protect the inside surfaces of the carbon steel. The lining is attached to the vessel at nozzle liners and two or more girth joints.

Remaining joints in the lining are free of attachment to the vessel. The lining is further supported by pressure bulging the lining over a pattern of 2 inch diameter x ¼ inch thick steel buttons welded to the shell only at two foot intervals and also by maintenance of a vacuum between the lining and the shell.

Under variations of pressure and temperature, an austenitic lining may expand or contract radially and axially. When temperature and pressure are high, the lining is in tight contact with the shell and in a state of compression. While the shell remains hot, the lining may be cooled by filling with cold chips. Axial tension develops by reason of retention by the buttons and by the girth attachment joints. In addition, the lining is free to contract radially, without stress except at the girth attachment joints and nozzles where bending produces added tension stresses equal to 182 per cent of the hoop stresses at the weld.

The radial and axial stresses combined produce stresses of the order of 60,000 psi with a possibility of subsequent fatigue failure. Reduced stress at points of fixity are, however, possible by the use of transition members which reduces direct stress and minimizes bending by avoidance of concentration by bending strain.

High Efficiency Melamine Wet Strength Resins

Melamine resin colloids are highly effective in imparting wet strength to papers by stock addition. C. S. Maxwell and R. R. House, of American Cyanamids' Stamford Research Labs, pointed out in their paper that the improved (HE) colloids are effective not only under normal papermaking conditions but also under high sulphate conditions which are detrimental to the unmodified colloid.

The regular colloid referred to throughout this paper is a colloid prepared from trimethylol melamine. The HE colloid solutions referred to have a MF mol ratio of 1:8 and are made by adding 5 mols of formaldehyde to the regular MF 1:3 product.

The big question is whether the HE colloid offers any real economic advantage over the regular colloid under mill conditions. With several possible exceptions the answer is yes; the cost of the extra formaldehyde is more than made up by the improved efficiency. Under normal sulphate conditions, from 40 to 70 lbs. of the HE colloid has proven to be equivalent to 100 lbs. of regular colloid, or roughly a 100 per cent improvement. Under adverse sulphate conditions, the improvement in efficiency is in the order of 1,000 per cent.

Other than actual gelation, there is an advantage efficiency-wise in the longtime storage of both Regular and HE colloids at 8 per cent. Colloids stored at higher solids tend to lose efficiency, particularly when used under high sulphate conditions.

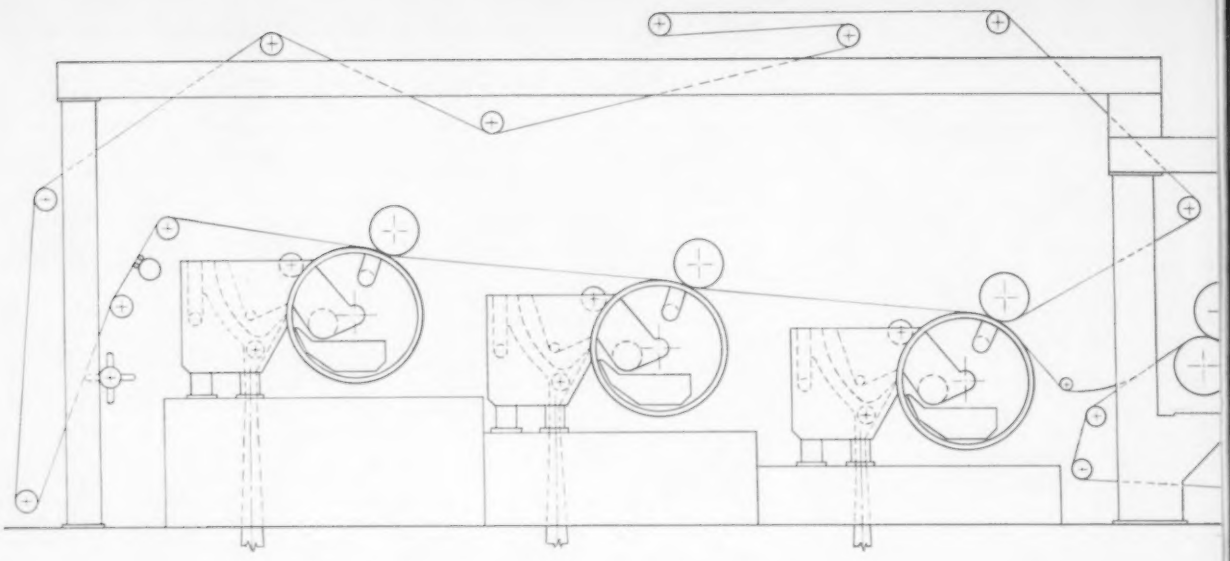
There is evidence that curing melamine and urea wet strength resins in paper is the formation of resin-to-resin bonds rather than resin-to-cellulose bonds. It is probable that the bonds formed by the HE colloid in this case would also be resin-to-resin. Because of its greater efficiency, these bonds must either be stronger or there must be more of them. Tests indicated that paper containing the HE loses appreciably more formaldehyde during the drying cycle and develops the higher wet strength. This is evidence that extra bonds are formed where this formaldehyde splits off.

It should be noted that relatively small amounts of additional formaldehyde give a major improvement in efficiency if the anion concentration (e.g. sulphates) are low, but that much higher amounts are required to obtain high efficiency under adverse anion conditions. It is thus practical economics to prepare the colloid by the use of the optimum amount of formaldehyde and the optimum amounts of hydrochloric acid for the particular system involved.

SUGGESTED FORMULATIONS FOR VARIOUS MF COLLOIDS

	HE-5 High Sulphates	HE 2½ Low Sulphates	Regular
Water (at 70°F ± 20) Gal.	89	99	88
Muriatic Acid (20°Be) Lbs.	31	31	39
Formaldehye (37%) Gal.	20	10	—
Trimethylol Melamine Lbs.	100	100	100
TOTAL (Gal.)	120	120	100
Lbs. Melamine Gal.	0.83	0.83	1.0
Approximate Solids (% MF_3)	10	10	12

The final solution should be allowed to age at least 3 hours before using.



New Multi-Unit Rotoformer Installation Unveiled at Sorg

Do these units make conventional vats obsolete? This progressive firm has replaced five normal vats with three Rotoformers. Performance has been good with several important operating advantages.

The Sorg Paper Co. of Middletown, Ohio, following an established practice of keeping its papermaking in the forefront of progressive mills, has again made papermaking history.

On January 19, 1961, the first multi-unit Rotoformer wet end went into production in the Sorg mill. This three-unit arrangement replaced a five vat wet end on Sorg's No. 2 paper machine on which tag stock, cover stock, telephone book cover and a variety of specialty sheets of similar character are produced.

There are more than 20 of The Sandy Hill Iron and Brass Works' Rotoformers operating in the trade as single units or in combination with previously installed forming elements, but this installation is the first multi-former wet end where the whole thickness is achieved by pick-up from successive Rotoformers.

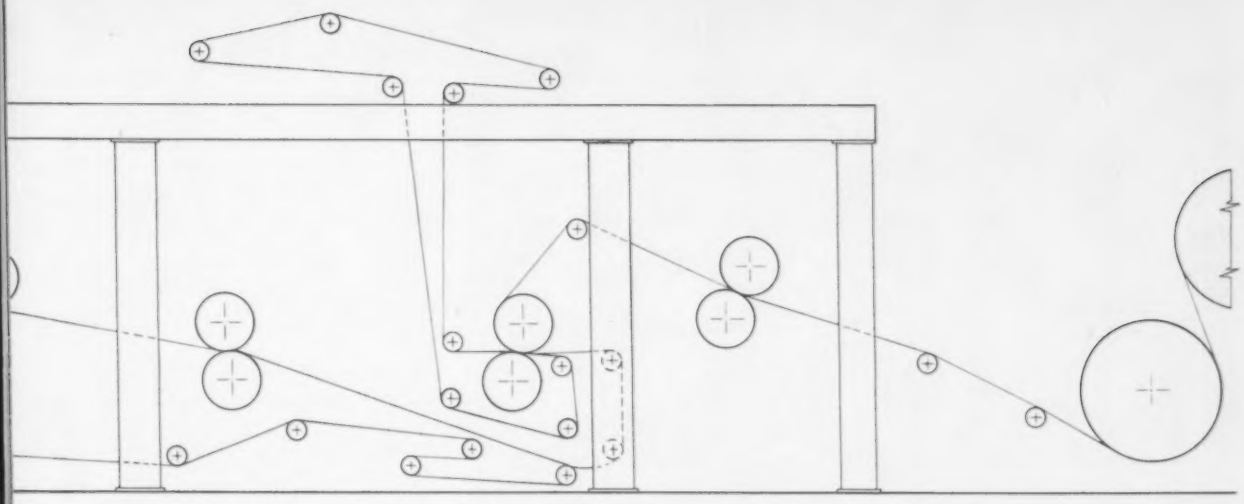
The century-old history of Sorg is studded with many other "firsts." Among the notable achievements in this respect were: The first manila paper made west of the Allegheny Mountains; the first successful waxing sheet—developed for the famous "Inner Seal" used by the National Biscuit Co.; the first successful textile spool paper made in this country (Sorg is still the chief supplier to the textile industry of this paper which was originally made in France); the first suitable film casting paper, which is used as a carrier for liquid plastics; the first wet-strength facial tissue; the first successful offset printing paper; one of the first practical latex-impregnated printing papers; and Sorg is one of the first American paper mills to produce a quality base paper for playing cards.

First Rotoformer Indicated Good Results

Sorg's interest in the Rotoformer developed during their search for new and better ways of forming cylinder papers. Various older conventional methods and more recent innovations were thoroughly studied and it was decided that the Rotoformer offered advantages which warranted further investigation. About a year ago a single Rotoformer was installed to replace one vat on the No. 2 machine.

This Rotoformer unit was set up at the end of the cylinder machine without a pickup felt. With this set-up the sheet formed could be stripped from the cylinder of the Rotoformer and passed over an open draw. It was then placed in the nip of the last cylinder couch, to be laminated with the product of the remaining four cylinders.

Such good results were indicated in the possible production of a variety of desirable sheets that Sorg's staff was convinced that three Rotoformers could replace the five conventional cylinder vats. After con-



siderable study and discussion among Sorg's operating and engineering personnel and Sandy Hill, the arrangement of the multi-unit installation was decided upon.

Three Units Replace Five Conventional Vats

The use of three Rotoformers to take the place of five vats effected a saving in space which could be used for additional drying or the spreading of the press section.

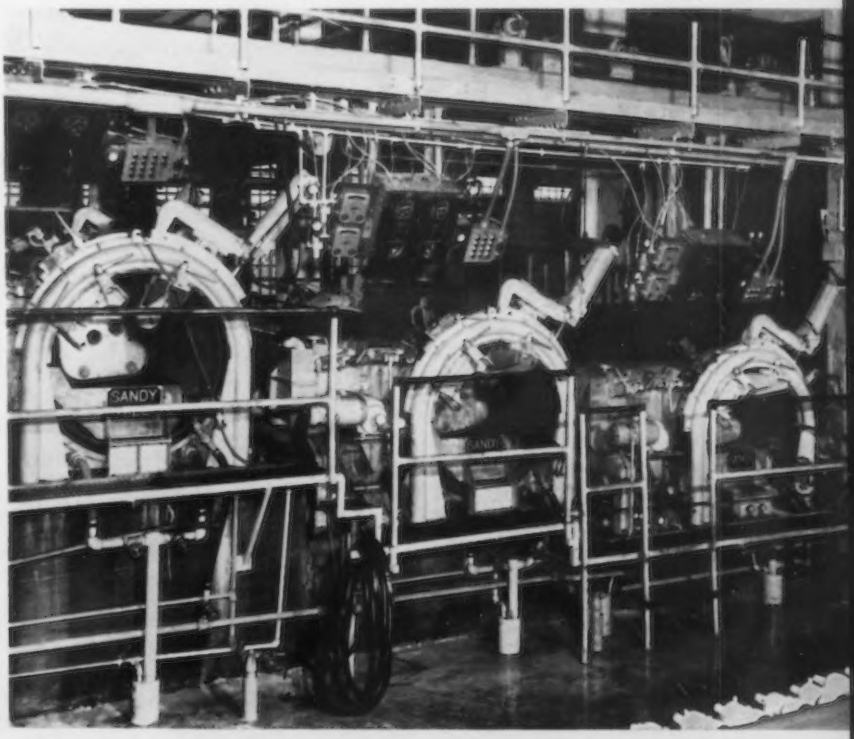
Sorg elected to give more room to the press section and a Patton press section was installed at the same time as the Rotoformers, still leaving space for additional dryers or presses as determined desirable.

Inasmuch as the wetness of the sheet at the point of pickup can be controlled on the Rotoformer the installation was designed so that the sheets are picked up on the first two units and then sufficiently dried on No. 3 Rotoformer to permit the sheet to be passed over an open draw to the press felt. This dryness of delivery from the last unit, which permits the sheet to leave the pickup felt ahead of the first press, is unique in multicylinder operation. The ply bond has proved to be very good and there is virtually no drop-off.

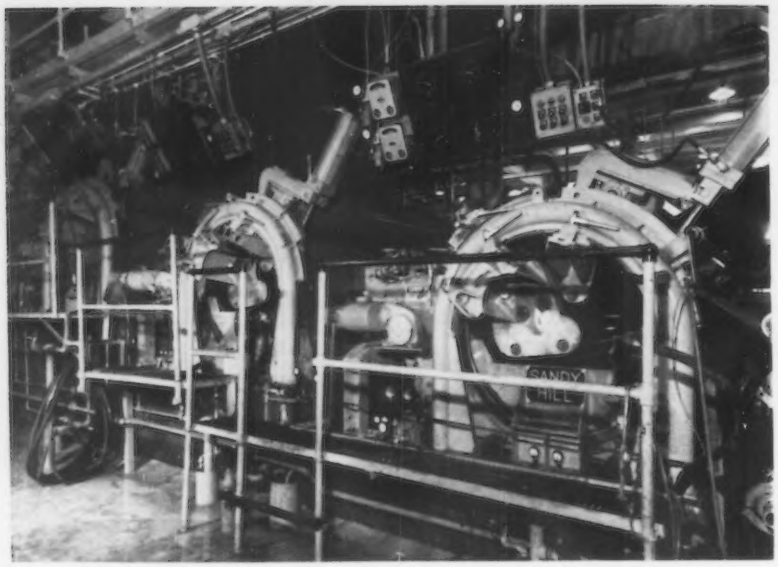
The three Rotoformers are arranged so that the paper travel is always toward the dry end. The first sheet is picked up farthest from the dryers and progresses in the same direction through the press section. The control of sheet dryness permits the operation of a single Rotoformer without any pickup felt and makes it possible for Sorg to produce a sheet on either one, or two or three Rotoformers.

Improved Operation

Eliminating the need of the pickup felt going through the presses has produced several advantages for Sorg. They are able to use a much shorter pickup felt. Felt cleaning problems are reduced because fibers are not pressed into the felt weave,



Overall view of No. 2 machine's wet end. Control of sheet dryness with these units makes it possible to produce a sheet on either one, two or three Rotoformers.



From the No. 3 Rotoformer the sheet can be seen traveling to the paper-carrying roll. The felt can be seen traveling upward from the couch roll to the return felt run.

as is the case when the felt goes through the primary presses in the conventional cylinder set-up.

As a result of the drier sheet going into the press section and the greater efficiency of the new press section Sorg engineers expect a substantial steam economy in the dryer section.

Sorg has found other improvements over conventional operation. They find that lumpy formation is avoided due to the fact that after the sheet is formed it is not drawn through a pond or slurry and so the formation, once accomplished, is not disturbed. After the sheet is formed, vacuum prevents any slip back of the stock.

Wetness at the point of pickup underneath the couch roll is controlled by a separate vacuum box which can be located as suits the papermaking requirements. The position of the couch roll can also be changed.

Piping for the whole installation, together with mix boxes and seal boxes and the like, was engineered by Sorg, and built by Brown-Singer. All piping and mix boxes are stainless steel and seal boxes and white water tank are tile construction.

Centrifugal pumps are by Goulds and Allis Chalmers; fan pump valves are Dezurik remote control; vacuum pumps are by Nash; the suction press roll was supplied by Manchester Machine; and vacuum controls are by Mason-Neilan.

Each Rotoformer is driven independently by a Dynamatic drive as supplied by the Eaton Manufacturing Co. The relative speed of the three Rotoformers is controlled by adjustments in the eddy-current coupling controls.

Each couch roll is controlled by air loaded cylinders and the adjustments for loading and lifting these are made from Foxboro panels at the tending side of the machine.

Optimistic Outlook

The anticipated formation advantages, such as levelness of profile, better formation, more pickup, of the Rotoformer were realized. It is Sandy Hill's belief that experience at Sorg would indicate that it may be possible to eliminate such things as suction drum presses and reduce the number of primary presses in a board set-up.

Results to date lead Sorg to be pleased with their decision and optimistic that further benefits will be realized in the improvement of present grades and the development of new Sorg products.

The results of the experimental work on the single Rotoformer installation, which were such as to encourage the Sorg management to decide on the multi-unit installation, were the joint effort of D. M. Yost, research and technical director; Donald J. Goodman, general superintendent of papermaking; and Dorsey R. Morrison, superintendent of Mill No. 1. On Mr. Morrison's shoulders fell much of the responsibility for putting the new installation into production and solving any unforeseen problems that might arise in so revolutionary a departure from conventional papermaking methods.

I. D. Sisson, chief engineer, working with his own crew and the engineering staffs of the various equipment suppliers, was responsible for the general layout.

Carl H. Eisenmenger, as vice president of operations, shoulders the final responsibility for the success or failure of the entire project. It is to the courage of such men as Mr. Eisenmenger and Donald G. Driscoll, president of the Sorg Paper Co., that the company owes its reputation for being a progressive and forward moving organization.

These men shared responsibility for the new installation: Dorsey R. Morrison, superintendent of Mill No. 1; Donald J. Goodman, general superintendent of paper making; D. M. Yost, research and technical director; Carl H. Eisenmenger, vice president of operations and I. D. Sisson, chief engineer.

NEW EQUIPMENT & SUPPLIES

Wet-Rub Tester of Surface Coatings

The Adams Wet-Rub Tester makes it possible to measure with accuracy a number of aspects of coated surfaces which previously have been measured by purely subjective methods. The results are obtained with speed and determinations can be made with little effort reports the manufacturer. The precision of the test method is such that 95 per cent of the readings are said to fall within two sigma limits.

The prime object of this test method is to determine the degree of wet-rub resistance of commercially produced offset papers. In order to insure actual abrasion in the tests, the Tester has been designed to insure at least a 4 per cent slip between the sample strip and the wet roll at the point of contact under actual conditions of immersion.

As any controlled variation in the test procedure will broaden the scope of the Tester, additional weights are furnished which will permit the operator to increase the basic nip pressure of 540 grams to a maximum of 1040 grams in 100 gram increments. Rotational speed can be changed if necessary by inserting an external varic in the 115 volt, 60 cycle line.

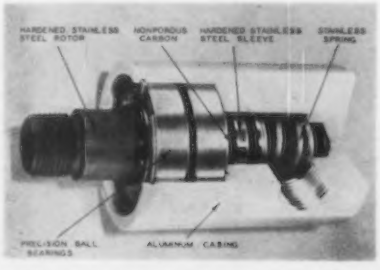
Wet-rub tests may also be used to determine a number of other relationships: curing curves will indicate the degree of adhesive insolubilization; change in curing cycle; paper machine drying conditions to show whether machine conditions are in balance for formulation cure, especially in the case of thermo-setting resins and whether variations in drying occur across the sheet; wet-rub values which may be plotted as a function of temperature, relative humidity, percentage of curing agent, etc.; and, extraction of water soluble materials when investigating the lowering of surface tension of offset dampening fluids.

The tester is light in weight and readily portable and occupies less than a square foot of space. Non-corrosive materials are used throughout in its construction and the finish is a baked gray enamel. Further information is available from Montague Machine Co., Turners Falls, Mass.

Yellow Paper Color has Cold Water Solubility

A bright canary yellow dyestuff for paper, Bond Yellow CP Extra, is introduced by Allied Chemical's National Aniline Division. The color is claimed to offer the advantages of outstanding tinctorial value and excellent cold water solubility.

Other characteristics of the dye include even dyeing with excellent non-twosidedness. Great affinity to the cellulosic fiber of the paper offers clear white water. For control of broke, it is readily bleachable and it fades on tone. Allied Chemical Co., National Aniline Div., 40 Rector St., New York 6, N. Y.



REVOLVING JOINT capable of handling 500 p.s.i. of air or hydraulic pressure with a minimum of turning torque at speeds around 1500 r.p.m. Long service is enhanced by using materials noted in the illustration. A Buna N O-ring provides a stationary seal for the sleeve. Rotherm Engineering Co., Inc., 7280 West Devon Ave., Chicago 31, Ill.

Continuous Starch Cooker Provides Accuracy of Control

The development of a continuous starch cooker by Penick & Ford, Ltd., Inc. is designed to facilitate preparation of size press coating and calender solutions as well as machine coating operations and wet end additions.

Gauges and controls are mounted on the control panel for easy accessibility and visibility. The design of the cooker makes it easy to remove parts as necessary for cleaning or replacement. Units will be shipped completely assembled and tested, requiring only connection of the slurry tank and the starch effluent line to steam, water and electrical service lines to ready the machine for operation.

The P & F Continuous Starch Cooker Model 11, occupies only 24x52 inches of floor space. Other models are about the same size. To vary the rate of starch flow, cooking concentration, concentration of effluent starch paste, or cooking temperature, all that is required is an adjustment of the controls on the panel.

The P & F Continuous Starch Cooker Model 11 will handle up to 8 g.p.m. of starch slurry. This slurry may be diluted with up to 12 g.p.m. of dilution water either before or after cooking, permitting the raw starch slurry to be prepared in concentrations up to 3 or 4 pounds per gallon with consequent savings in slurry tank capacities, etc. If preferred, the dilution water addition after cooking can be utilized for lowering the effluent temperature and the paste concentration.

The temperature controls on the Model 11 cooker will maintain the gelantinizing temperature at any desired level between 90° F. and 195° F. Thus, the precise degree of starch hydration or swelling desired for a particular use can be attained.

Depending upon processing needs, the P & F Continuous Starch Cooker can be modified to provide almost any desired capacity, concentration or cooking temperature ranges.

SF NEWSLETTER

THIS HOUSE WAS BUILT ON AIR – BY SF

This yet-unfinished building will soon be the new home of American SF Products.

Here, SF will have the facilities to meet the growing need for our air-handling equipment. In these offices, our engineers will provide services ranging from consultation on your air-handling problem to application data on SF's air-wise products, including the revolutionary Type L Flakt Dryer* which transports the pulp sheet on the drying air, the compact SF Axial Flow Fans* that provide maximum regulation economy, and the SF Flue Damper* for dust-laden gases.

The building is located on a bluff of the Palisades, overlooking New York City, where it is convenient to every type of Metropolitan transportation. We hope that you'll visit us at our new address, which, after April 1, 1961, will be: 701 Palisades Avenue, Englewood Cliffs, New Jersey.

* Patented, U.S. & Foreign

★
AMERICAN SF PRODUCTS, INC.
420 Lexington Avenue, New York, N. Y.
SF Products Canada Ltd.,
940 Cote de Liesse Road, Montreal

Strapping Tool All Air-Powered

The AMP, a portable all power-operated combination strapping tool, has been announced by Signode Steel

Strapping Co. Air power does all the work: engages the feed wheel, tensions the strapping, applies the seal, severs the strap from the coil, and disengages the feed wheel. Previous powered combination models utilized pneumatic or electric power for the tensioning cycle only.

Developed especially for the AMP is a self-interlocking nested seal that simplifies loading into the tool, permits partial stacks to be loaded. Nibs in the flanges of the seal hold the stack together and in alignment until the seal is automatically fed into position on the strapping.

The AMP's pneumatic power is said to cut manual operations to a minimum. To complete a strapping cycle, the operator need only open the rear gripper and wipe in the bottom strap end, slide the top strap under the feed wheel, press the tension lever, then the sealer lever, and swing the tool free from the strapping.

Its short base, 4¾ inches, and the elimination of tensioning and sealing handles permit the AMP to be used in cramped spaces, on small packages. The tool has a steel base for maximum durability. The AMP weighs only 22 pounds and, with its universal suspension bracket, can be used interchangeably in a vertical or horizontal position.

Strap tension is adjustable to 1,200 pounds at 90 p.s.i. on the AMP 58M—for ⅝-inch strapping and on the AMP34M for ¾-inch strapping. Special high-tension models deliver 1600 pounds. In addition, there is a high-tension model, the AMPR58T, which seals with a reverse notch. Signode Steel Strapping Co., 2600 N. Western, Chicago 47, Ill.

Doctor Blades Offered In Variety of Materials

John W. Bolton & Sons, Inc., Lawrence, Mass., has added the production of doctor blades of all types to its industrial knife division. The announcement was made by John W. Bolton, Director of Marketing Services.

The company's decision to develop this new product line, Mr. Bolton said, was strongly influenced by pressure from customers who have long expressed a desire to have an additional source of supply for doctor blade replacements.

Bolton doctor blades are now available in all sizes and types in the following materials: tempered carbon steel, cold rolled steel, stainless steel, K-Monel steel, phosphor bronze, laminated plastic, special alloys and materials for special applications.

Acrylic Copolymer Binder Is Self-Reactive

X-Link Resyn 2833, a cross-linking acrylic copolymer latex designed for saturation of cellulosic and synthetic fiber papers of all types has just been introduced by National Starch and Chemical Corp. It is designed for applications which require strong yet flexible binders with a very high degree of resistance to water, solvents, and chemicals.

X-Link Resyn 2833 is said to produce high tensile strengths concurrently with very high tear characteristics and is well suited for many saturation end uses. No compounding or formulating is necessary to cross-link this resin and develop its properties. The physical characteristics of the latex are such that it saturates with a minimum of difficulty.

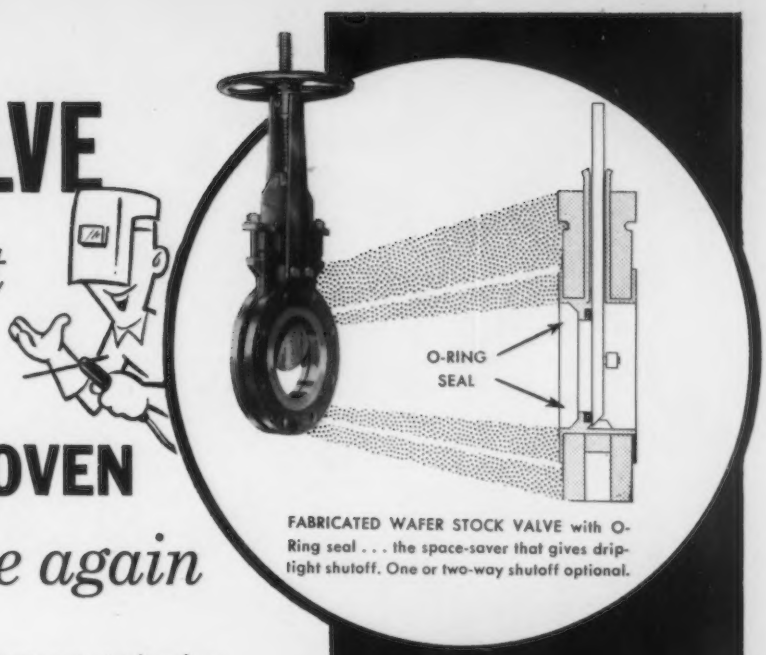
It has been known for many years that thermoplastic resin dispersions containing reactive sites could be cross-linked with thermosetting resins to improve water resistance, solvent resistance, heat resistance, and toughness. However, stability, odor, high curing temperatures, extra handling and poor compatability were always difficult problems. X-Link Resyn 2833 has eliminated these drawbacks and offers all of the advantages of such a cross-linking system, says National.

FABRI-VALVE

Resilient-seat stock valves

TESTED...PROVEN

time and time again



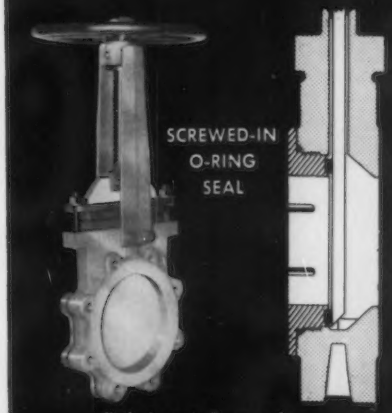
FABRICATED WAFER STOCK VALVE with O-Ring seal . . . the space-saver that gives drip-tight shutoff. One or two-way shutoff optional.

Long-lasting Fabri-Valve resilient-seat stock valves have proved their worth by years of low maintenance operation in severe, tough shutoff service. Precision, time-tested engineering of the O-Ring seating in Fabri stock valves, assures you of positive, drip-tight shutoff under the most severe conditions. Choice of Viton "A" or Hycar O-Ring.

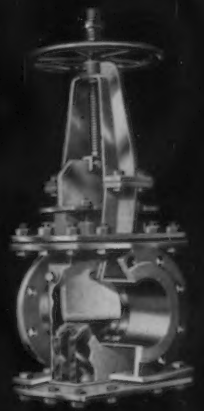
FABRI-CAST BONNETLESS STOCK VALVE with screwed-in resilient seat for positive shutoff and easy maintenance. Solid one-piece cast body with inverted packing gland.

FABRI RUBBER SEATING KNIFE-GATE VALVE. Compressible rubber seat rings assure drip-tight shutoff. When open, full port opening gives unobstructed flow.

WRITE OR CALL FOR FULL INFORMATION OR QUOTATION



Fabri-cast Bonnetless Stock Valve



Fabri Rubber Seating Knife-Gate Valve

TRADE MARK **FABRI-VALVE**

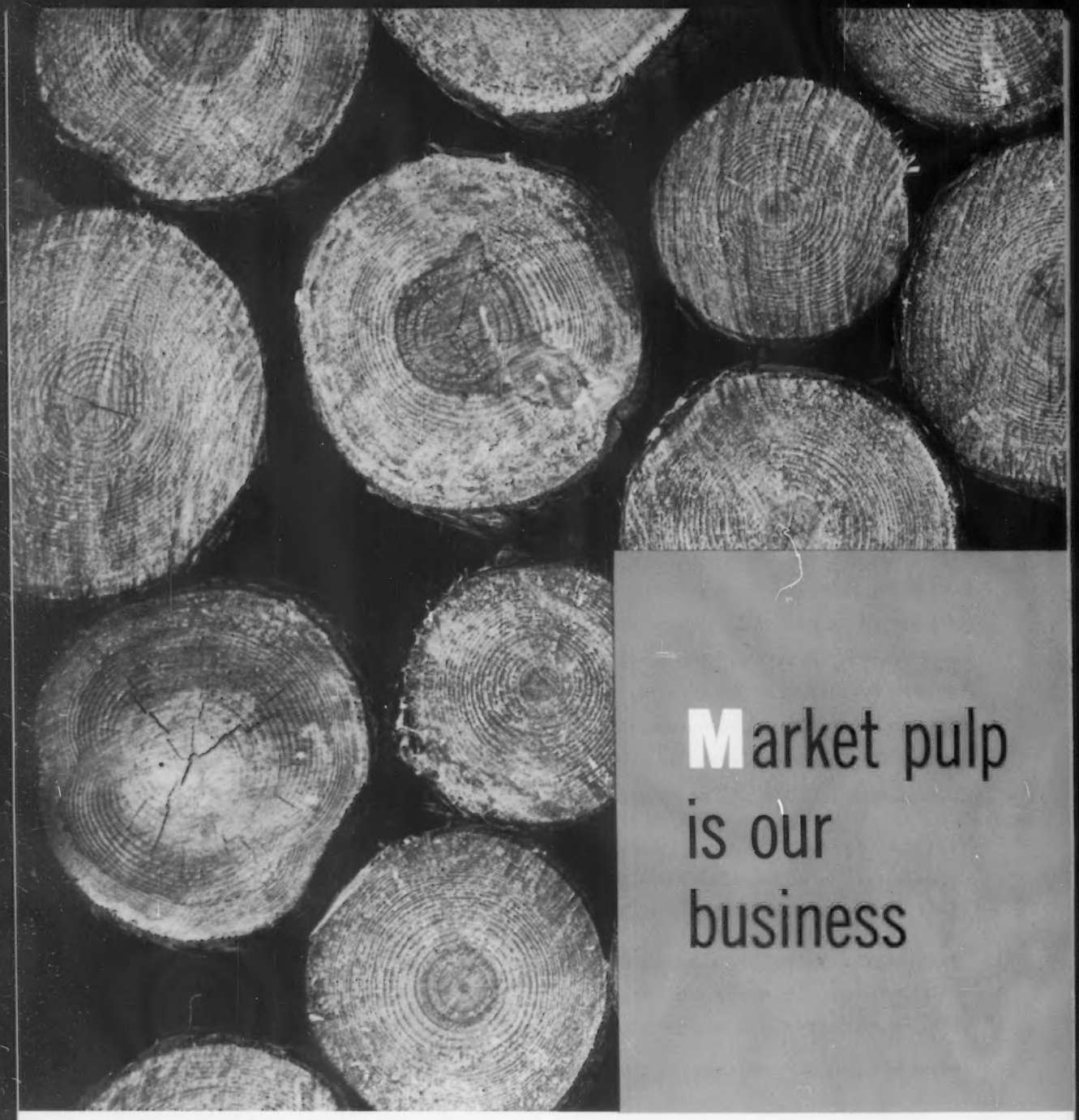
COMPANY OF AMERICA

91 N. E. RUSSELL ST.

P. O. BOX 4352, PORTLAND 8, OREGON

WEDGE GATES
STOCK VALVES
BUTTERFLY VALVES
CHECK VALVES
DIGESTER VALVES
V-PORT METERING

Above valves covered by one or more of the following patents: U. S.: D-179,791; 2,669,416; 2,683,581; 2,720,379; 2,824,715; 2,832,564; 2,873,943; 2,883,148; 2,893,684; 2,948,503; RE.24,401; RE.24,735 CANADA: 523,382; 583,135; 588,330; 592,555; 595,462; 598,397; 598,415 NEW ZEALAND: 114,966; 118,852; 119,616; 121,763; OTHER PATENTS PENDING.



Market pulp is our business

HOW BUCKEYE RESEARCH AIDS THE PAPER INDUSTRY

An extensive research program has helped Buckeye earn its reputation as a leader in bleached krafts for the paper industry. Buckeye technical facilities and staff of over 200 now comprise one of the world's most complete pulp centers. In the forests, Buckeye research is resulting in faster growing trees with improved pulp characteristics. In the plant, it has brought about such refinements as a unique system of double screening and 8-stage bleaching.

Our technical staff and modern laboratories are available to Buckeye customers for research

BUCKEYE

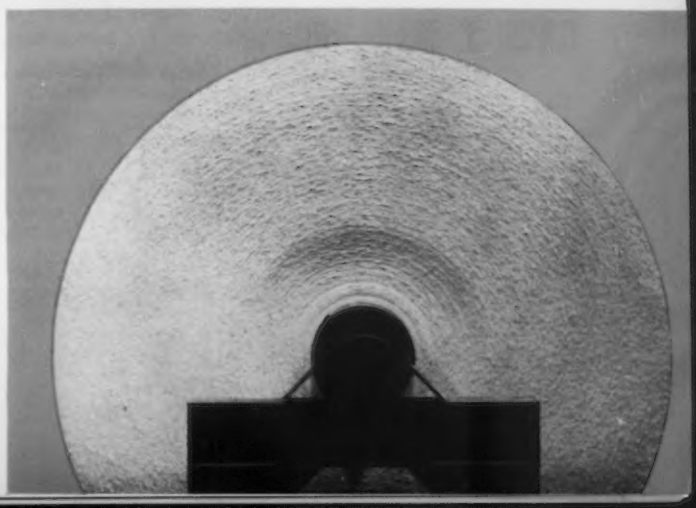
The electron microscope permits direct study of fiber surfaces and their effect on pulp characteristics.

projects of mutual interest. Phone us for further information, or write for our new brochure on pulps for the paper industry.

BUCKEYE CELLULOSE CORPORATION
Memphis, Tenn. / Foley, Florida

KRAFT

Also cotton linter pulp and chemically modified cotton linter pulp



Figures of the Week

PAPER PRODUCTION RATIO REPORT—American Paper & Pulp Assn. Figures
(Production as per cent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

	Jan. 21	Jan. 28	Feb. 4	Feb. 11	Feb. 18
1961	89.2	89.9	91.6	91.9r	87.7
	Jan. 23	Jan. 30	Feb. 6	Feb. 13	Feb. 20
1960	96.9	96.3	97.8	98.2	98.5

r Revised.

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1960	96.5	97.7	98.1	96.9	97.6	96.1	81.2	91.7	89.1	94.8	92.0	80.2	92.7
1961	87.8‡												

‡ Preliminary.

COMPARATIVE YEARLY SUMMARIES

	1954	1955	1956	1957	1958	1959	1960	1961
Year to Date	94.3	94.7	100.0	95.3	87.4	88.5	97.2	88.6
Year Average	91.6	96.2	97.9	90.4	87.0	92.2	92.8	

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available.

PAPERBOARD OPERATING RATIOS†—National Paperboard Assn. Figures

COMPARATIVE WEEKLY SUMMARIES

	Jan. 21	Jan. 28	Feb. 4	Feb. 11	Feb. 18
1961	90	90	90	90	87
	Jan. 23	Jan. 30	Feb. 6	Feb. 13	Feb. 20
1960	95	97	96	96	96

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1960	92	95	94	93	94	92	78	94	88	93	86	73	89
1961	88												

‡ Preliminary.
† *Per cents of operation based on "inch-hours" reported on a 6-day basis to the National Paperboard Association.*

SUMMARY OF PAPERBOARD STATISTICS—National Paperboard Assn. Figures

ITEM	WEEK ENDING Feb. 11, 1961	WEEK ENDING Feb. 18, 1961	CUMULATIVE TO DATE Jan. 1, 1961 to February 18, 1961
% Activity	90%	87%	88%
Total	301,286	298,124	2,013,191
Containerboard—Domestic Use	157,407	147,481	1,006,370
Liner	102,421	95,305	665,062
Corrugating Material	50,240	46,907	310,466
Chip & Filler Board	4,746	5,269	30,842
Boxboard—Domestic Use	90,285	101,723	643,914
Folding	54,079	60,519	379,874
Set-Up	9,820	10,374	65,748
Special Food Board	26,886	30,830	198,292
Other Paperboard	53,594	48,920	362,907
Containerboard Type	25,091	20,593	168,360
Boxboard Type	28,503	28,327	194,547
Total Orders			
Received	303,580	282,504	
Unfilled End of Week	407,005	389,973	

CHAS. T. MAIN, INC.
ENGINEERS
PROCESS STUDIES, DESIGN, SPECIFICATIONS, CONSTRUCTION SUPERVISION
PULP AND PAPER MILLS
STEAM, HYDRAULIC AND ELECTRICAL ENGINEERING
REPORTS, CONSULTATION, VALUATIONS
•
BOSTON, MASSACHUSETTS
CHARLOTTE, NORTH CAROLINA

Stadler Hurter
International Ltd.
Engineers • Designers • Consultants
Specializing since 1923 in all phases of design, modernization and expansion of pulp and paper mills from forest to finished product.
1501 ST. CATHERINE ST. W. MONTREAL
NEW YORK • MEXICO • STOCKHOLM
PARIS • ZURICH

OBITUARIES

Edmund E. Barrett, 68, president of the Canadian Woodpulp Corp. in New York until it was dissolved last spring, died February 26 in New Rochelle Hospital after a brief illness. Mr. Barrett was first and only president of the company organized five years ago as a wholly owned subsidiary of the Great Lakes Paper Co. of Fort William, Ont.

Ernest F. Belter, 69, power superintendent, Consolidated Water power & Paper and Consolidated Power companies, died February 17 in San Bernardino, Calif. Since 1950 he has been manager of the Wisconsin River Power Co.

James Lide Coker III, 56, of Hartsville, S. C., president of Sonoco Products Co. died February 16 in Presbyterian Hospital in New York.

Born in Hartsville, he was educated at Woodberry Forest, the University of North Carolina, received his Masters Degree in Business Administration at Harvard in 1928, and was awarded the honorary degree of Doctor of Industries by Clemson College in 1958. In 1928 he began work with Sonoco as assistant treasurer and became president on the death of his father in 1931.

He was president of the National Fibre Can and Tube Ass'n. from 1940 to 1941; in 1939, he became the youngest member of the board of directors of the National Ass'n. of Manufacturers.

Joseph M. Conway, 70, died February 19 in a St. Petersburg, Fla., hospital. Since his retirement as president of the Charmin Paper Products Co. in January 1957, he had been residing in that city. Mr. Conway served as president of the Charmin firm from 1925 until he retired.

Prior to his entrance into the paper industry, he was active in banking services. He was appointed to reorganize the John Hoberg Paper Co., predecessor of the Charmin firm, and took over the presidency of the company in 1925.

Thomas Compton Walsh, 78, formerly sales manager of Hollingsworth & Vose Co., died February 15. His employment with Hollingsworth & Vose began in September, 1908, and continued until his retirement December 31, 1948. He served as sales manager from 1921 until his retirement.

Bright new note in direct dyes!

National®
BOND YELLOW CP EXTRA
(patent applied for)

Important news for paper-makers!

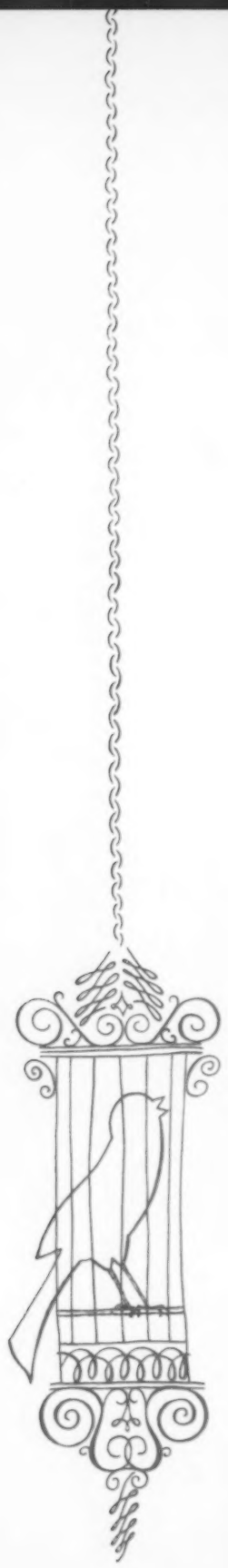
This unique new direct yellow . . . developed by National Aniline specifically for the paper trade . . . is the *first* to combine *all* of these operating advantages:

- **GOOD TINCTORIAL VALUE!** In many cases, substantial economies can be effected in producing canary and bright green shades.
- **BETTER NON-TWOSIDEDNESS!** Even in clay-filled sheets, there's usually no need to tint the wire side.
- **EXCELLENT BLEACHABILITY!** For easy control of broke.
- **ABSOLUTELY CLEAN WHITE-WATERS!** Shows exceptional affinity for cellulosic fibers.
- **VERY GOOD COLD-WATER SOLUBILITY!** Add it dissolved or dry, winter or summer, with uniform results.
- **LESS VARIATION IN SHADE DURING RUNS!** Affected very little by pH changes on the machine.
- **FADES ON TONE!**

TRIAL RUNS SUGGESTED

Ample stocks of National Bond Yellow CP Extra are immediately available. Your National Aniline representative will gladly schedule a trial in your mill. Phone, wire or write today!

This stock colored with National Bond Yellow CP Extra
For specifications see reverse side . . .



This sheet colored with

National®

BOND YELLOW

CP EXTRA

(patent applied for)

4 lbs. per ton of mixed, bleached pulp with 5% ash

Another example of what we are doing through research and through our expert knowledge of paper-dye application to help you make better colored papers more economically. Our technical staff and laboratories are always at your service.

Allied Chemical

NATIONAL ANILINE DIVISION

40 RECTOR STREET, NEW YORK 6, N. Y.

Atlanta Boston Charlotte Chicago Dallas Greensboro
Los Angeles Philadelphia Portland, Ore. Providence San Francisco

In Canada: ALLIED CHEMICAL CANADA, LTD.,
1450 City Councillors St., Montreal 3 100 North Queen St., Toronto 18

Distributors throughout the world. For information:
ALLIED CHEMICAL INTERNATIONAL • 40 Rector St., New York 6, N. Y.

Uniformity

Uniformity

The uniformly good PERFORMANCE you want is built into your Albany felts . . . and it doesn't just happen.

Felts that produce more and last longer are the result of painstaking care in field engineering, design and manufacture and an unending application of experience and testing. . . .

A vital first step in the creation of productive and durable felts is taken when Albany Felt Sales and Service Engineers thoroughly familiarize themselves with your machines, production techniques and felt performance records.

Your requirements are then literally built into each Albany felt you order. Every possible scientific and human effort is put to work to make your Albany felt exactly to your specifications.

You can plan on performance . . . felt after felt after felt.

ALBANY FELT COMPANY
ALBANY, N.Y.

AF

Dedicated to Paper Industry Progress

N. Monmouth, Maine • Hoosick Falls, N.Y. • St. Stephen, S.C.
Cowansville, Quebec • Cuautitlan, Mexico

HOW DOES ALBANY FELT COMPANY ASSURE PAPERMAKERS OF FELT UNIFORMITY?

120 different checks assure *Uniformity*

The Closeness Testing Machine provides one of 120 specific checks made during the manufacturing process of every Albany felt. This mechanical test measures porosity by exerting a back pressure of air on the felt. This proves drainage qualities.

The porosity test takes place after manufacture *but the exacting and numerous details of uniformity and quality control begin way back:* with the selection and approval of the wools, the scouring, the preparing of the blends of wool, or wools and synthetics . . .

Take yarn making, for example. Some roping, which is spun into yarn, must not vary more than *one tenth of an ounce per mile!* Over 500 different varieties of yarn are used by the Albany Felt Company. Each yarn is checked frequently against prescribed specifications for weight, tensile strength and elasticity.

In the fulling process, during which the felt is reduced in size by as much as one half, numerous measurements are made to assure exact width and length.

This type of detailed felt testing continues *right through to your machine.* Check after check after check . . .

THE PAY-OFF:
IMPROVED FELT PERFORMANCE
—AND PROFITS—
AT YOUR MILL

TALK IT OVER WITH YOUR ALBANY FELT SALES ENGINEER

ALBANY FELT COMPANY
ALBANY, N.Y.

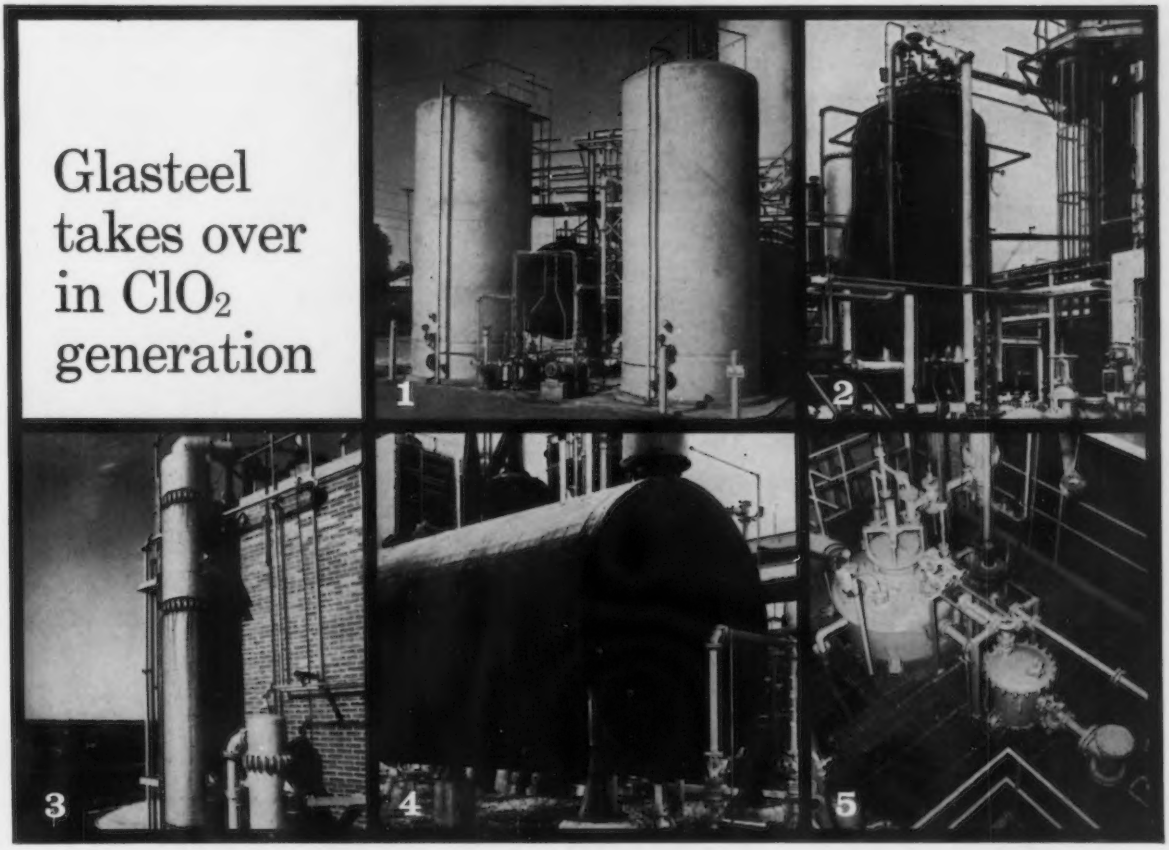
AF

Dedicated to Paper Industry Progress

N. Monmouth, Maine • Hoosick Falls, N. Y. • St. Stephen, S. C.
Cowansville, Quebec • Cuautitlan, Mexico

FLUIDICS* AT WORK

Glasteel takes over in ClO_2 generation



1. SODIUM CHLORATE 20,000-gallon storage tanks at Scott Paper Company's mill in Mobile, Alabama, are made from Pfaudler® Glasteel to eliminate corrosion at constantly changing liquid-air interface and assure clean chlorate supply. In capacities of 10,000 gallons and over, Glasteel costs less than stainless steel.

2. PRIMARY ClO_2 GENERATOR at Marathon Southern, like most of the other equipment, is made of corrosion-resistant Glasteel. It has a five-ton-per-day capacity.

3. ABSORPTION COLUMN (left) and SCRUBBER COLUMN (right). Two of several Glasteel columns in use in ClO_2 plants for either absorption, stripping or scrubbing.

4. CHLORINE DIOXIDE stays safe and pure until it's ready for use in this 15,000-gallon tank of Glasteel construction. There are more than 20 such Glasteel ClO_2 solution storage tanks in use today in North America.

5. PROJECT ENGINEERING SERVICE offers complete design, layout, procurement, installation and operator training—a turn-key job for an integrated, economical plant. The "Puffless Wonder" is what they're calling this Pfaudler-engineered plant at Gaspesia Sulphite Company, Ltd., at Chandler, Quebec. Shown are Glasteel primary and secondary generators and stripping column with F-C (field-cut) Glasteel pipe.

Why Glasteel in all this key equipment for making chlorine dioxide? Because it is the one material that can economically handle all the corrosives encountered. And, Pfaudler can provide about everything you need—from major equipment and accessories to complete engineering service. For more details, send for Reprint No. 535. Write to our Pfaudler Division, Dept. PT-31, Rochester 3, New York.

*FLUIDICS is the Pfaudler Permutit program that integrates knowledge, equipment and experience in solving problems involving fluids.

PFAUDLER PERMUTIT INC.
Specialists in FLUIDICS . . . the science of fluid processes

Prices of Fibers

MARKET WOOD PULP

FIRST QUARTER CONTRACT PRICES PER SHORT AIR-DRY TON

Delivered Basis

	U.S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$82.50/ 90.00	$82.50/ 90.00	$90.00/ —	$90.00/ —	$90.00/ —
Bleached Gw'd.	97.50/100.00	97.50/100.00			
Kraft, Blchd.	‡140.00/150.00	‡140.00/150.00	150.00/ —	150.00/ —	150.00/ —
Kraft, Blchd. Hdwd.	135.00/140.00		140.00/ —		
Kraft, Semi-bleached.	130.00/140.00				
Kraft, Unbl.	117.50/125.00	125.00/ —	125.00/130.00	125.00/ —	
Sulphite, Blchd.	‡135.00/140.00	‡135.00/140.00	140.00/ —	140.00/ —	140.00/ —
Sulphite, Bl. Hdwd.	135.00/ —				
Sulphite, Unblchd.	125.00/ —	125.00/ —	125.00/ —	125.00/ —	125.00/ —
Sulphite, Unb'l. Gl'sn.		140.00/ —	134.00/ —		
Soda, Blchd.	130.00/135.00	130.00/135.00			

‡ Depending on Brightness.

COTTON LINTERS

F.O.B. OIL MILLS

WEEK ENDED FEBRUARY 21

	Atlanta	Memphis	Dallas	Los Angeles
Grade 1	n.a.	n.a.	n.a.	n.a.
2	n.a.	n.a.	n.a.	8.00/7.50
3	$7.00/6.50	$7.50/7.25	$7.50/7.00	7.25/6.75
4	6.50/5.75	6.50/6.25	6.50/6.25	6.50/6.25
5	5.75/5.25	5.75/5.50	6.00/5.50	— /6.00
6	5.25/4.25	5.00/4.75	5.25/5.00	— /6.00
7	4.25/3.75	4.25/4.00	4.75/4.00	n.a.

WASTE PAPER MARKET

Mill Prices, f.o.b. Trucks Shipping Point — Includes Brokerage

These quotations are a partial indication of the price range on volume tonnage in each market on the date specified, as gathered from major dealers and brokers. SPECIAL PACKINGS AND SPOT TONNAGE NOT INCLUDED. Prices nominal.

	New York	Boston	Chicago	Los Angeles
	Feb. 27	Feb. 27	Feb.	Feb.
No. 1 Mixed Paper	$ 7.00/ 9.00	4.00/ 7.00	6.00/ —	12.00/ —
No. 1 News	12.00/ 13.00	11.00/ —	11.00/ —	13.00/ 14.00
Overissue News (Lg. size)	11.00/ 13.00	9.00/ 11.00	16.00/ —	18.00/ —
Mill Wrappers	19.00/ 22.00	9.00/ 11.00	9.00/ —	13.00/ —
Old Corrugated Containers	19.00/ 20.00	17.50/ 18.00	18.00/ —	17.00/ —
Super Resorted Kraft Paper	35.00/ 40.00	— / —	28.00/ —	50.00/ —
New Double Kr. Ld. Corr. Cuts	27.50/ 30.00	30.00/ 32.50	30.00/ —	27.50/ —
(Semi-chem. medium)	45.00/ —	45.00/ —	42.50/ —	— / —
New 100% Kraft Corr. Cuts	40.00/ 42.50	— / —	52.50/ —	— / —
New Br. Kraft, Env. Cuts	65.00/ 70.00	65.00/ 70.00	47.50/ —	45.00/ —
New Br. Kr. Bag Waste Prntd.	50.00/ 55.00	50.00/ 60.00	47.50/ —	35.00/ —
New Br. Kr. Bag Waste Unprintd.	55.00/ 60.00	60.00/ 65.00	55.00/ —	42.50/ —
No. 1 Groundwood Shvs.	25.00/ 30.00	20.00/ 25.00	10.00/ —	30.00/ —
White Newsblanks	42.50/ 45.00	47.50/ 52.50	30.00/ —	55.00/ —
No. 1 Soft White Shvs.	55.00/ 60.00	55.00/ 60.00	50.00/ —	75.00/ —
Super Soft White Shvs.	65.00/ 75.00	70.00/ 80.00	60.00/ —	— / —
Hd. White Shvs.	75.00/ 80.00	80.00/ 90.00	75.00/ —	80.00/ —
Hd. White Env. Cuts	90.00/ 95.00	100.00/105.00	80.00/ —	103.00/ —
Col. Tab. Cards	40.00/ 42.50	40.00/ 42.50	35.00/ —	35.00/ —
Manila Tab. Cards	57.50/ 60.00	57.50/ 60.00	55.00/ —	60.00/ —
No. 1 Col. Ledger	32.50/ 35.00	30.00/ 35.00	35.00/ —	18.00/ —
White Ledger	45.00/ 50.00	42.00/ 47.00	45.00/ —	40.00/ —
Mixed Book & Mag.†	— / —	— / —	8.00/ —	— / —
No. 1 Books‡	15.00/ 17.50	18.00/ 22.00	22.50/ —	14.00/ —

† Includes Time & Life; no coarse groundwood. ‡ Not to exceed 10% of groundwood.

ANOTHER NEW ACHIEVEMENT IN MODERN FLOW CONTROL BY CRANE

1 Single retaining nut holds cartridge assembly in body, for fast, foolproof dismantling and assembly

2 Teflon* thrust washer reduces stem friction; absorbs line pressure load on ball

3 Teflon* seats pre-loaded for tight shut-off with minimum torque

4 Bright plastic grip insulates handle and flags valve position

5 Positive, Standard Size O-ring seals on stem, cartridge

6 Self-aligning, precision-machined ball, polished and chrome-plated to minimize friction and wear on seats.

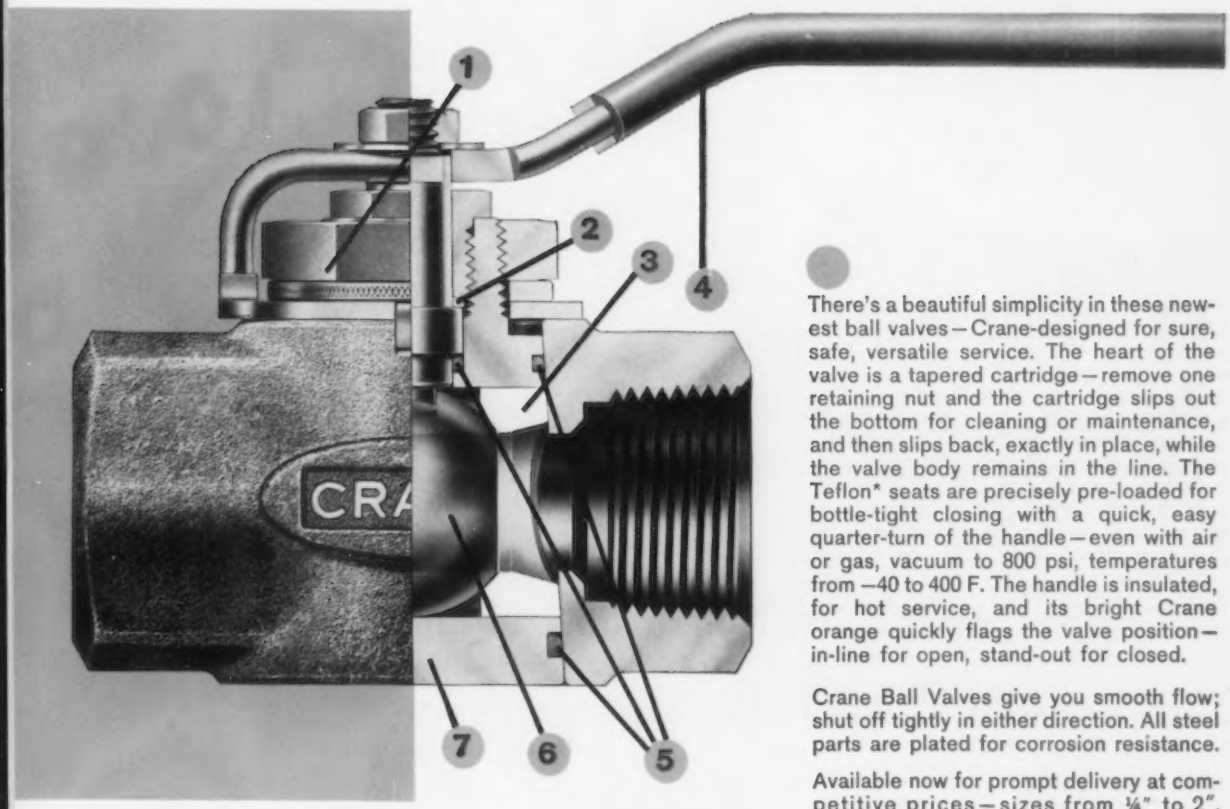
7 Tapered cartridge contains all working parts; slips out bottom in one piece for cleaning or maintenance

* Teflon is a registered trademark of E.I. DuPont de Nemours & Co., Inc.

CRANE BALL VALVES

with the exclusive tapered cartridge that drops out for fast, in-line servicing

plus tight shutoff and self-cleaning seats



There's a beautiful simplicity in these newest ball valves—Crane-designed for sure, safe, versatile service. The heart of the valve is a tapered cartridge—remove one retaining nut and the cartridge slips out the bottom for cleaning or maintenance, and then slips back, exactly in place, while the valve body remains in the line. The Teflon* seats are precisely pre-loaded for bottle-tight closing with a quick, easy quarter-turn of the handle—even with air or gas, vacuum to 800 psi, temperatures from —40 to 400 F. The handle is insulated, for hot service, and its bright Crane orange quickly flags the valve position—in-line for open, stand-out for closed.

Crane Ball Valves give you smooth flow; shut off tightly in either direction. All steel parts are plated for corrosion resistance.

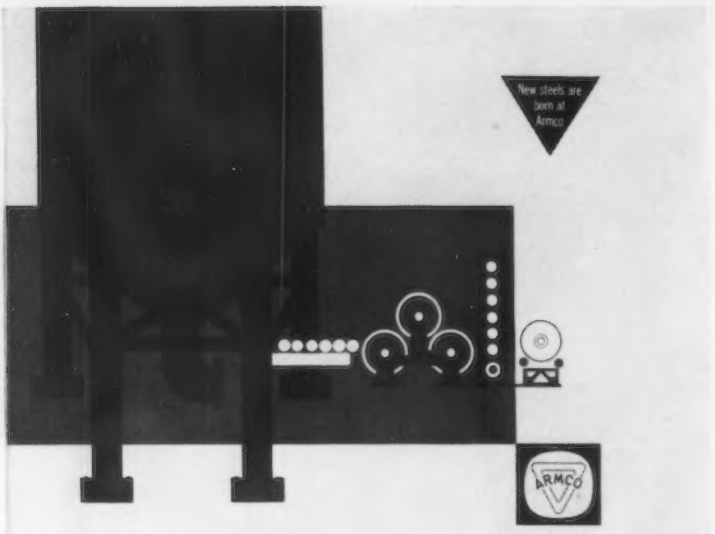
Available now for prompt delivery at competitive prices—sizes from ¼" to 2", screwed ends, in bronze, steel and Type 316 stainless.

Call your Crane Distributor or send today for a complete, illustrated folder on the outstanding new Crane Ball Valves, engineered for unmatched service.

CRANE

CRANE CO. Industrial Products Group
4100 South Kedzie Ave., Chicago 32, Ill.
In Canada, Crane Ltd., 1170 Beaver Hall Square, Montreal

Valves/Electronic Controls/Piping/Plumbing/Heating/Air Conditioning



HOW
ARMCO STAINLESS STEELS
improve
pulp,
paper
and profit

Armco Manual

Provides Performance Data on Stainless Steels In Pulp and Paper Mills

Armco's newest booklet for the pulp and paper industry summarizes data on the performance of stainless steel based on in-service corrosion tests and plant experience. It provides pertinent information on how and why stainless steels are being used to help achieve maximum production at minimum cost.

Key sections of the manual present a review of the performance of stainless in pulp and paper mills, and the reasons why stainless steels solve material problems at low overall cost. Extensive corrosion data, obtained from in-stream exposures and analyzed by corrosion engineers, give comparative corrosion rates for various conditions and media.

The manual also lists suggestions on design, fabrication and maintenance that help assure most effective and economical service from stainless steel equipment.

Write us today, or contact your Distributor of Armco Stainless Steels for your free copy of this useful booklet, "How Armco Stainless Steels Improve Pulp, Paper and Profit." Armco Division, Armco Steel Corporation, 1521 Curtis Street, Middletown, Ohio.

For Durability, Economy and Strength

Get Armco Stainless Steels and Information on Their Use From These Steel Service Centers

(A) Sheets, Strip and Plates (B) Bars and Wire

AMERICAN STEEL & ALUMINUM CORP. (AB)
Hartford, Conn.

AMERICAN STEEL & ALUMINUM CORP. OF MASS. (AB)
Cambridge, Mass.

BROWN-WALES COMPANY (AB)
Cambridge, Mass.—Auburn, Maine—Worcester, Mass.

CENTRAL STEEL & WIRE COMPANY (AB)
Chicago, Ill.—Cincinnati—Detroit—Milwaukee

CHICAGO STEEL SERVICE COMPANY (AB)
Chicago, Ill.

CLEVELAND TOOL & SUPPLY COMPANY (B)
Cleveland, Ohio

THE CONGDON AND CARPENTER COMPANY (AB)
Providence, R. I.—Fall River, Mass.

C. A. CROSTA INC. (A)
Denver, Colo.

DUCOMMUN METALS & SUPPLY COMPANY (AB)
Los Angeles, Calif.—Berkeley—Phoenix San Diego—Seattle

EDGCOMB STEEL & ALUMINUM CORP. (AB)
Hillside, N. J.

EDGCOMB STEEL COMPANY (AB)
Philadelphia, Pa.—Charlotte, N.C.—Greensboro, N. C.—York, Pa.

ESCO CORPORATION (AB)
Portland, Oregon—Denver—Emeryville, Calif. —Eugene, Oregon—Los Angeles—Seattle—Spokane—Vancouver, B. C.

PETER A. FRASSE & COMPANY, INC. (AB)
New York, N. Y.—Buffalo—Hartford—Lyndhurst, N. J.—Philadelphia—Syracuse

FIRTH BROWN STEELS LTD. (AB)
Montreal, P. Q.—Toronto

GATE CITY STEEL, INC.—OMAHA (A)
Omaha, Nebr.

INDUSTRIAL STAINLESS STEELS, INC. (B)
Cambridge, Mass.—Buffalo, N. Y.

EARLE M. JORGENSEN COMPANY (AB)
Los Angeles, Calif.—Dallas—Denver—Houston —Oakland—Phoenix—Seattle—Tulsa—Wichita

MAPES & SPROWL STEEL COMPANY (AB)
Union, N. J.

METAL GOODS CORPORATION (AB)
St. Louis, Mo.—Dallas—Denver—Houston—Memphis—New Orleans—N. Kansas City, Mo.—Tulsa—Wichita

MONCRIEF-LENOIR MFG. COMPANY (AB)
Houston, Texas—Dallas—Harlingen—Lubbock—San Antonio—Temple

MORRISON STEEL COMPANY (AB)
New Brunswick, N. J.

THE ORLEANS STEEL PRODUCTS COMPANY, INC. (A)
New Orleans, La.

WILLIAM M. ORR COMPANY, INC. (AB)
Pittsburgh, Pa.

PAPER-CALMENSON & COMPANY (A)
St. Paul, Minn.

RICHARDS & CONOVER STEEL & SUPPLY COMPANY (A)
Kansas City, Mo.

SEABOARD STEEL & IRON CORP. (B)
Baltimore, Md.

SENECA STEEL SERVICE, INC. (AB)
Buffalo, N. Y.

SOUTHER STEEL & ALUMINUM COMPANY (A)
St. Louis, Mo.

J. M. TULL METAL & SUPPLY CO., INC. (AB)
Atlanta, Ga.—Birmingham—Greenville, S. C. —Jacksonville—Miami—Tampa

VIKING STEEL COMPANY (AB)
Cleveland, Ohio

VORYS BROTHERS, INC. (AB)
Columbus, Ohio

YORK CORRUGATING COMPANY (A)
York, Pa.—Washington, D. C.

ARMCO

Armco Division

PJT NEW LITERATURE

Bowen Spray Dryers For Pilot Plant

Discusses special design spray dryers for pilot plant and hard to dry materials, and moderate production dryers (up to 20 tons a day). Gives information on capacity, specifications of air heating, chamber sizes and construction atomization, duct arrangement, product collection and accessory instrumentation. Bulletin #37. F. P. Walther, Jr. & Associates, Inc., 147 East 50th St., New York 22, N. Y.

Du Pont's Dry Acid Cleaners

Illustrates use of sulphamic acid cleaners for in-place descaling of industrial equipment which has increased about 800 per cent in the last eight years according to Du Pont data. Lists advantages—efficiency, ease of handling, safety. At elevated temperatures has no fumes. Used on a "do-it-yourself basis" it saves expense of outside cleaning contractor. Bulletin. E. I. Du Pont de Nemours & Co., 4147 Du Pont Bldg., Public Relations Dept., Wilmington 98, Del.

Ductile Iron Regulator and Control Valve

Describes in detail the composition, properties and specifications of ductile iron valves and has a comparison table on steel, cast iron, and red brass versus ductile iron, plus, the results of a severe quench test on ductile iron. Explains how ductile iron is able to replace steel in many applications at a considerable cost savings. This bulletin is also a condensed catalog of all OPW-Jordan products. OPW-Jordan, 6013 Wiehe Road, Cincinnati 13, Ohio.

Jet Compressors

Covers construction and operation and includes information on types and sizes and performance data. Lists many advantages compared with other types of compressing equipment. Compressors used in the process, paper, petroleum, power, gas, and other industries to circulate steam, boost low-pressure steam, and to mix, transfer, and compress gases. Bulletin 4E. Schuette and Koerting Co., Dept. JA-33, Cornwells Heights, Bucks County, Pa.

Embeco Pre-Mixed Grout

Tells how this non-shrink, ready to use Grout gives assurance that the right type of cement is employed, and all ingredients are accurately proportioned and thoroughly blended so that

Meet Huyck's
George Gill

"Big" George Gill (he's 6'5", 220 lbs.) climaxed his first ten years' service with Huyck when he was appointed Assistant Sales Manager of the Huyck Felt Co. on September 1, 1960. (Paul Mansuy is Sales Manager).

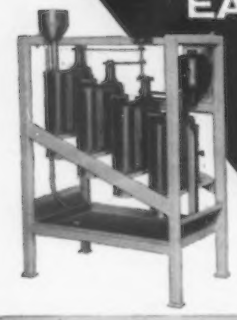
George spent these ten years in the field as a member of the Sales Engineer and Field Service Engineer Staffs. In both capacities, he travelled back and forth across the country serving Huyck's customers. He knows practically every paper mill in the country and he brings a wide range of experience to his new position.

"Big" George is a graduate of the Department of Pulp and Paper at the New York State College of Forestry at Syracuse University. George will be headquartered in Rensselaer; will live in Albany with wife Mary Ellen and children Alan, Nancy and David.

George is one more reason why Huyck Performance is High Performance through experience and professional "know-how".

HUYCK FELTS
FIRST IN FELTS SINCE 1870

STOCK CONTROL MADE EASY



Get quick, accurate results with the Bauer-McNett Fiber Classifier.

For complete details and bulletin, write or call us at FAirfax 3-5501.

The Bauer Bros. Co.
HEADQUARTERS FOR PROGRESS
1758 Sheridan Ave. • Springfield, Ohio

only the addition of water is needed at the job site. Contains diagrams, charts and photographs. Bulletin. EPMG-2a. Master Builders Co., Cleveland 18, Ohio.

Eimco Filter Media Facilities-Service

Describes how better results in filtration can be achieved with the many filter media fabrics and weaves now available for vacuum and pressure filters which provide many opportunities for increasing the efficiency of filtration by properly matching filter media with the characteristics of the slurry to be filtered. Media selection is a function in which there are many chances for error. Avoid the error. Bulletin F-2037A. The Eimco Corp., P. O. Box 300, Salt Lake City 10, Utah.

Stilbene Yellow 10GP

Describes new direct dyestuff yielding a bright greenish yellow shade on paper. It is used primarily for dyeing sized papers in clean shades of yellow and green from pastel to medium depths and applied to sized stock in beater dyeing by conventional methods for either batch or continuous coloring. In batch operation the dye can be added dry without causing color specking. Bulletin G-812. General Dyestuff Co., 435 Hudson St., New York 14, N. Y.

Neenah Multiple Speciman Paper Expansimeter

Describes this instrument of proven capabilities for measuring Hygroexpansivity. Now giving satisfactory service in some of the outstanding paper laboratories, it is made for continuous operation and will give years of trouble free service. Is accurate, sure, reliable, inexpensive. Bulletin, The Martin Sweets Co., 114 South First St., Louisville 2, Ky.

Hydraulic Oscillators for Showers, Doctors

Announces the availability of an entirely new, simplified, hydraulically operated actuator for doctor knives, showers, felt conditioners and similar equipment where a positive controlled oscillating motion is required. Thoroughly shop and factory tested, it is now operating successfully in U. S. paper mills. Bulletin. Tomlon Corp., 199 Jackson St., Trenton 10, N. J.

High Pressure Boiler Water Gages and Valves

Give more inches of visibility and no blind spots. Gages are built with the chamber machined from a solid piece of alloy steel, with the glasses arranged to provide continuous visibility and of individual lengths to meet the working steam pressure conditions. Valve with horizontal loop is standard with eight different gage assemblies. Bulletin, Jerguson Gage & Valve Co., 80 Adams St., Burlington, Mass.

Honeywell Electronik Controllers

Gives information on strip chart or circular chart recording and indicating models, and circular scale indicating models. Electric or pneumatic control can be obtained in almost every type. Contains charts, photographs, specifications. Helps with your selection, whether you are planning the first automatic control system, or are expanding existing facilities. Catalog C-15-2a. G. A. Reed, Product Editor, Minneapolis-Honeywell Regulator Co., Wayne and Windrim Avenues, Philadelphia 44, Pa.

Falk Shaft and Flange Mounted Drives

Includes recent enginering developments incorporating the Falk line of Shaft Mounted and Flange Mounted Drives. New series of Flange Mounted Drives now covers a torque range up to 44,000 lb.-in. New dimensional data and engineering drawings are included. Revised Bulletin 7100. A. H. Kelley, manager, sales promotion & advertising, The Falk Corp. P. O. Box 492, Milwaukee 1, Wis.

Bjorksten Research Laboratories

Describes their work—research—development—and engineering services on a contract basis to both industrial and government sponsors. Investigates large or small research problems within their fields of service, such as development of new and improved materials, evaluation and screening of new products, fundamental and applied research related to known and little known materials. Bulletin. Bjorksten Research Laboratories, P. O. Box 265, Madison 1, Wisconsin.

42-Inch Double Disc Refiner

Contains complete construction details and dimensional information. Describes new concept in design that provides a free flow of stock through the rotating disc, unrestricted by arms or spokes of any kind, permitting feeding at even uniform rate, regardless of stock consistency, eliminating stock surges and enabling the refiner to be operated at its full rated horsepower. Permits use of standard motors and is suitable for up to 3,000 connected horsepower. Bulletin 231, Sprout-Waldron, Pulp and Paper Mill Division, Muncy, Pa.

SHOW-THROUGH

THINK OF IT IN TERMS OF SAVINGS IN MAILING COSTS!

Offer your customers light-weight papers fortified with HORSE HEAD® titanium dioxide.

Show them how they can save money in mailing costs while still getting a paper of maximum whiteness, brightness, opacity, and resistance to show-through.

You can produce all these outstanding paper properties with HORSE HEAD titanium dioxide.

We shall be glad to furnish further details.

HORSE HEAD PRODUCTS

HORSE HEAD® TITANIUM DIOXIDE

THE NEW JERSEY ZINC COMPANY, 160 Front St., New York 38, N. Y.

Founded 1848

Also distributed by BULKLEY DUNTON PULP CO. INC. • New York, N. Y. • Kalamazoo, Mich. • San Francisco, Calif.

PJT NEWS OF SUPPLIERS

J. E. Smith

S. Van Praag

Albany Felt Co., Albany, N. Y., has named James E. Smith, sales manager for the past five years, vice president and general manager of Albany Felt Co. of Canada, Ltd.

Samuel Van Praag has been named to the sales manager position for felts manufactured in the United States. His headquarters are at Albany, N. Y.

Mr. Smith joined Albany Felt in 1945, after long experience in the paperboard manufacturing field. Soon after, he became assistant sales manager and, in 1955, sales manager.

Mr. Van Praag, formerly sales manager of the Industrial Fabrics Division of Albany Felt Co., began his services with the company in 1941 as a sales representative, advanced to assistant sales manager in 1952 and sales manager in 1957.

Shawinigan Resins Corp. has transferred Robert P. Carlson from the sales department to the technical service department.

In his new capacity, Mr. Carlson will be responsible for technical service on adhesives applications of Shawinigan products.

Industrial Nucleonics Corp., Columbus, Ohio, has appointed Donald C. Brunton director of research. Industrial Nucleonics manufactures the AccuRay Measuring, Control, and Data Systems used extensively in industry for process control.

Dr. Brunton brings to the corporation extensive experience in both electronics and nucleonics. He has been identified with industrial applications of nucleonics since the origin of this technology. He was president and founder of Isotopes Products, Ltd., Oakville, Ontario. Since 1957, he has served as product manager of the Nuclear Radiation Department of a large Eastern manufacturer.

Nopco Chemical Co., Newark, N. J., has appointed John N. Gammon vice president in charge of Industrial Division sales.

Thirty-year veteran in sales and application of industrial chemicals, and formerly the firm's southern district sales manager, Mr. Gammon will be replaced by James H. Holmes who has been a Nopco southern sales representative. Mr. Holmes will assume his new post at Nopco's Cedartown, Ga., district office.

General Dyestuff Co., General Aniline & Film Corp., New York, has promoted Otto F. Habel to general product line manager—dyestuffs and has named J. O. Atwood product line manager—vat and sulphur dyestuffs.

Mr. Habel joined General Dyestuff in June 1929, after graduation from Pratt Institute. He has served as manager of the printing laboratory in the technical department, as a technical representative in the New England area. He returned to headquarters, 435 Hudson Street, N. Y., as assistant technical manager in 1958. In July 1959, he was advanced to the position of product line manager—vat and sulphur dyestuffs, where he remained until his current new appointment.

The dyestuff product managers, the technical manager and the supervisor —administrative services of the General Dyestuff Co. Division's marketing department will operate under Mr. Habel's direction.

Mr. Atwood, who takes over Mr. Habel's previous position, and reports to him, joined the company in 1949 in the technical department. He has been located in General Dyestuff's Charlotte office since 1952 serving as a technical representative and as manager—Charlotte applications laboratory. Mr. Atwood graduated from Massachusetts Institute of Technology, Cambridge, Mass., in 1945.

Newport Industries Division of Heyden Newport Chemical Corp., has announced key organizational changes, made to strengthen the marketing and customer service function.

The division will now have four product sales managers, each responsible for developing sales programs and strategy to improve the company's competitive position for assigned products and to plan for the sales opportunities that will arise for new products now in the development stage.

Responsible for the over-all supervision of the new product sales manager task force will be Leonard F. Pinto, named manager of sales development. Mr. Pinto was previously the division's manager for rubber chemicals and had been a member of the division's technical sales service staff since 1947.

All appointees will be located ultimately at Pensacola. J. Korose has been appointed product sales manager, rubber chemicals; A. G. Dreis,

"Hey boys — smelts are running!"

THIS IS RAYBRITE

service

There's a successful way to meet competition and pulp problems when you're a Rayonier customer. You call for Technical Service and a pulp technician is on his way, bringing you broad-band experience, a total knowledge of our pulps, plus full support of Rayonier Research.

This way you derive every benefit inherent in great paper-making pulps, like Raybrite, a bleached softwood sulfite with exceptional built-in properties.

So when you need paper-making pulps, consider Rayonier first . . . where customer service comes first.

For unusually high standards of brightness and cleanliness essential to specialty papers. Typical tests unbeaten: Canadian Standard Freeness 728; Tear Factor 0.59; Mullen Factor 14; Opacity 82.3%; G.E. Brightness 95.8%. Write for samples and full data.

RAYONIER
GREAT PAPER-MAKING PULPS

Rayonier Incorporated
161 East 42nd Street
New York 17, New York

World's Most Complete Line of Paper-Making Pulps: *Western hemlock bleached sulfites; western softwood bleached sulfates; western red cedar bleached sulfates; southern pine bleached sulfates; southern hardwood bleached sulfates; southern pine bleached sulfites.*

POSITIVE CONTROL OF MATERIALS FLOW

Need completely slaked, homogeneous mixtures? Do shut-downs for grit and clinker removal hold up production? Do hot, dust-laden vapors foul up your feeder? Do you have excessive bearing trouble . . . causing leaks and costly maintenance? B-I-F Pug Mill Slakers save lime, time and trouble...add profits to your process!

Free Facts

For automatic, unattended operation . . . for progressive zone slaking . . . for positive water ratio control at all rates, ask for details on the most advanced, performance - proved slaker available. Write for free facts today!

B-I-F Industries

BUILDERS-PROVIDENCE • PROPORTIONEERS • OMEGA
383 HARRIS AVENUE, PROVIDENCE 1, RHODE ISLAND

product sales manager, paper chemicals; C. A. Brier, product sales manager, resin chemicals; and F. J. Stief, product sales manager, terpene chemicals.

Sprout-Waldron & Co., Inc., Muncy, Pa., has appointed V. H. Cullen as sales engineer for Sprout-Waldron's pulp and paper equipment in eastern Canada.

Mr. Cullen is a graduate of McGill University and has had broad experience in the engineering, manufacture and sale of equipment to the Canadian pulp and paper industry. His experience includes five years with Pulp & Paper Consulting Engineers. He was a director and sales manager of Douglas Brothers, Ltd., St. Laurent, Quebec.

In his new position, Mr. Cullen will concentrate on the application of Sprout-Waldron's broad line of refiners for the various processes in which they are finding wide application and use. His address is 77 Allard Avenue, Dorval, P.Q., Canada. He assumed his new duties February 1.

V. H. Cullen

G. Browder

National Starch and Chemical Corp. announces that George Browder has joined the company in engineering sales. Mr. Browder will work out of the New York office and will be engaged in developing the sales of the Instant-Lok System of adhesion.

The Instant-Lok System consists of specially formulated hot melt adhesives which are hopper fed and premelted by passage through a heated extrusion unit and then applied to the surface to be adhered through types of nozzles and applicators each designed for a particular end use. It is an extremely versatile system operating at very high rates of speed and providing a means of adhering dissimilar and difficult to adhere surfaces.

Minneapolis-Honeywell Regulator Co., has appointed J. E. MacConville a sales coordinator for its Special Systems division and Fred B. Akerson to succeed him as regional industrial sales manager in Atlanta.

Most recently, Mr. Akerson has been director of field education and training for Honeywell's Industrial Products Group. He has been with the company since 1946, serving as branch manager and later as regional sales manager in Portland, Ore.

Ellery Hall, director of the company's Education Center in Philadelphia, will assume Mr. Akerson's former duties.

S. K. MAGEE (center), manager, Industrial Controls, RCA, appoints Southworth Machine Co. sales representative for RCA Electronic Paper Flaw Detection Equipment. G. E. Thurber, (left) executive vice president and H. T. Hawks, (right) vice president, sales, Southworth Machine, look on.

National Starch and Chemical Corp., New York, has transferred William A. Hanson from the New York district sales office to western New York State. He will make his headquarters at Buffalo. He will represent the National Adhesives Division in handling the sales of packaging adhesives.

Mr. Hanson is a graduate of Juniata College, where he received a B.S. degree in economics in 1952. He served in the United States Marine Corp., where he obtained the rank of First Lieutenant.

Ted A. Newman has been transferred to the Southeastern Division and will make his headquarters at the Atlanta office, 87 Haynes Street, N.W. Mr. Newman received his B.S. in business administration from Fordham University in 1955. He has represented the National Adhesives Division in sales in New York and Baltimore since he joined the company in 1958.

Lawrence Okun has been transferred from the New York sales district to the Baltimore office. He will represent the National Adhesives Division in the sale of packaging adhesives. Mr. Okun is a graduate of Hofstra College.

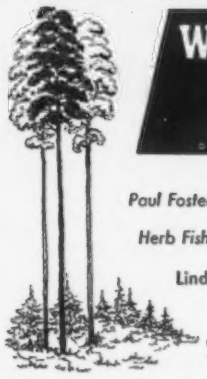
AMERICAN AND ENGLISH CLAYS

FOR ALL PAPER MAKING PURPOSES

ANGLO-AMERICAN CLAYS CORP.

(Formerly: English China Clays Sales Corporation)

6 East 45th Street, New York 17, N. Y.



WILLIAMS-GRAY COMPANY

221 North LaSalle Street
Chicago 1, Illinois

Serving the Paper Industry
WILLIAMS-GRAY COMPANY
1906

Paul Foster • Peter Talbot

Herb Fishburn • Wes Gallup • Bill French

Lindsay Wires
Knox Woolen Felts
Mount Vernon Dryer Felts
Carrier Rope, Splicing Tissues, Deckle Webbing, Apron Cloth, Wire Brushes

Jordan Shell and Plug Fillings

TRADE-MARK

POSITIVE

Reg. U. S. Pat. Off.

High Speed Disc Refiner

THE BAHR BROTHERS MFG. CO.

MARION, INDIANA, U. S. A.

PRICE & PIERCE

LTD.

WOODPULP

PAPER

LONDON
27 CLEMENTS LANE

NEW YORK
60 EAST 42nd ST.

MONTREAL
SUN LIFE BLDG.

Knox Felts

KNOX WOOLEN COMPANY

CAMDEN, MAINE

America's First Manufacturer of Endless Paper Machine Felts

PAPER TRADE JOURNAL CLEARING HOUSE

Help Wanted

PAPER MEN

$5,000 to $50,000

SALES • PRODUCTION • TECHNICAL

Finding and landing THE ONE BEST JOB requires sound analysis, careful planning, proper contacts and skillful negotiation.

Paper men ourselves, and the only recognized professional specialists in the world in our particular field, we assist responsible paper men to accelerate their careers by uncovering and developing THE SPECIFIC SITUATION that most exactly fits the needs of each individual we serve.

If you seek to better yourself, and your performance to date entitles you to our endorsement, we can and will help you. Contact us in absolute confidence for information regarding procedure.

GEO. M. SUNDAY & ASSO.

PERSONNEL CONSULTANTS TO THE PULP, PAPER & ALLIED INDUSTRIES

6 East Monroe, Chicago ANdover 3-1970

TF

PAPER MILL CHEMIST

Outstanding opportunity for young man with degree in pulp and paper manufacturing. Position will involve general technical responsibilities in a medium sized Michigan mill of a national paper manufacturer. This position will provide right man with chance to move into production management after attaining suitable experience. Send resume and salary requirements to Box 61-48 care Paper Trade Journal. M-13

Help Wanted

CHEMIST or CHEMICAL ENGINEER WANTED

Graduate, with three to five years' experience in the pulp and paper industry, for an integrated bleach kraft pulp and specialty paper mill. Involves work in mill control and/or process control and development. Opportunity for a competent and ambitious man to advance to positions of greater responsibility. Excellent benefits and good starting salary. Please furnish complete particulars as to experience, education and reference to: Box 61-27 care Paper Trade Journal. M-6

Wanted TOUR BOSS

FOR BOXBOARD MILL WITH BACKGROUND IN SETUP AND FOLDING GRADES. SEND COMPLETE RESUME STATING AGE, EXPERIENCE, EDUCATION AND REFERENCES. REPLIES TREATED CONFIDENTIALLY. ADDRESS BOX 61-44 CARE PAPER TRADE JOURNAL. M-6

TAPPI Local Section Staff Man

The TAPPI headquarters office has an opening for a young man interested in providing staff liaison for TAPPI local sections and districts. New York City location. Moderate travel involved. Technical education and paper industry experience highly desirable. Interested applicants please send resumes and salary requirements to:

Executive Secretary, Technical Association of the Pulp and Paper Industry, 360 Lexington Avenue, New York 17, New York. M-6

TECHNICAL SUPERINTENDENT

We have opening for a Technical Superintendent to head up our Technical Services Department at our Naheola, Alabama operations. Operations consist of Bleached Kraft Pulp Mill, Bleached Specialties, Light Weight Paper and Boards, Tissue and Toweling Manufacture and Converting. Responsibilities include process engineering, quality control, statistical department, and administration of laboratory. Excellent opportunity.

Please send resume of experience, education and salary requirements to:

Industrial Relations Department

MARATHON SOUTHERN CORPORATION

A DIVISION OF AMERICAN CAN COMPANY

P. O. Box 315, Butler, Alabama M-6

GIBBS-BROWER CO., INC.

10 Depot Plaza, White Plains, New York

Established 1898

Telephone—Rockwell 1-1130

BRANCHES:

Acepsa
Albeniz #4418
Mexico 15, D.F.

400 Wash. Building
Madison 3, Wisconsin

5270 E. Wash. Blvd.
Los Angeles 22, Calif.

PRINTING PRESSES

1—30" 6-color Kidder celloprinter
1—50" 3-color Custom made flexo press
1—42" 4-color Crawford Flexo Press
1—42" 4-color Hudson Sharp Flexo Press
1—48" 6 color Heinrich, 4 Flexo 2 Gravure
1—41⅜" 5-color Staude Roto Gravure Press
1—51" 3-color Flexo Press
1—40" 4-color W & H Flexo Press
1—36" 6-color Cottrell Heinrich Flexo Press
1—33" 6-color Modern Clipper Flexo Press
1—33" 4-color Wolverine Hydro-Printer
1—32" 3 color Flexo Tail Printer
1—26" 3-color gravure press
1—24" 5-color Kidder Celloprinter
1—24" 4-color Kohlbach Flexo Press with Stanford Web Guide and Tension Controls

POWER PAPER CUTTERS

SEYBOLDS:	64" precision	
	56"-Dayton	44"-Dexter
	50"-Precision	44"-C&P
		44"-Oswego
	44"-Mod. "CF"	44"-10Z
75"-Oswego	40"-Mod. "CF"	38"-Oswego
	50"-C&P	32"-Oswego
57"-Oswego	50"-Dexter	32"-3Y

CAMACHINES

1—162" Type 10 Model 19 Shear Cut
1—102" #18
1—87" Type 12
1—72" Type 10 6A, Anti Friction Bearings
1—62 and 42" 26-3A
1—72" 10-10A
1—62" 10-11A
1—62"—28-3BT
1—52" & 1—42" Model 24-7
1—50" 28-3D
1—42", 50" & 62" Type 6
1—32" 26-3A
1—52", 10 5-A

OTHER SLITTERS

1—102" Langston, 60" Rewind Capacity
1—82" & 1—92" "BA" Langstons
1—73" Moore & White S & R—50" Rewind Cap.
1—60" & 1—40" Fales Model "C"
1—40" & 1—52" Fales Model "B"
1—60" Inman With Reeves Drive
1—52" Molsel (Shear-Cut)
2—40" Beck Razor Blade Slitters
1—40" & 1—60" Kidder SH 40" rewind
1—24", 1—30", 1—36" & 1—40" Kidder S.L. & 1—36" SLN

MISCELLANEOUS MACHINES

1—166" Clark-Aiken Duplex Sheeter w/layboy
1—100" & 60" Hamblet w/layboy
1—90" M&W Sheeter, Overlapping Delivery and Layboy
1—84" Hamblet Duplex Heavy Board Sheeter
1—78" M&W Sheeter & Layboy
1—75" Hamblet Duplex—Erie Layboy—Overlapping Delivery
2—72" Hamblet Single Sheeters with Layboys
1—64" Hamblet sheeter with layboy
1—48" Mamco Layboy
1—55" CSH-Beck Sheeter
1—45" CCSH Beck Sheeter
2—38" x 24" 4-Post Seybold Die Presses
5—Sheridans: 66" x 44", 60" x 30", 50" x 24", 44" x 22" & 36" x 18" and 1—Ford-Smith: 48" x 40" and 2—Hobbs 24" x 44"
Embossers 48" 55" Waldron & 50" Heavy Duty Hudson Sharp Tinter-Embosser
1—40½" Hudson Sharp Toilet Interfold
1—Multipath Bag Machine—4 Color Holweg Printer
1—Honsel Millinery Bag Machine (Model S-50) Wide Range & 3 Color Printer
1—Strachan & Henshaw Bag Machine—2-color Aniline Printer
1—Model 4 Potdevin Sack Machine
1—Nagel Ryan bag machine 4 color printer
1—60" H/S Household Wax-Roll Winder
Lawtomatic Towel & Tissue Wrappers
1—Hayssen 4-roll Toilet Wrapper
1—34" Waxer with 4-Ton Refrig. Unit
1—New 3 Deck Hudson Sharp 10 x 10 Cocktail and Hanky Machine
1—40" International Paper Box Machine Co.'s Sheet-Fed Carton Waxer
1—46" Norwood Glassine Super Calender Stack M-6

ROSS PAPER MACHINERY CO.

265 PASSAIC STREET • NEWARK 4, NEW JERSEY

STANLEY S. ROSS, President — HUMBOLDT 4-8880

SUPPLIERS OF PAPER MACHINERY TO THE WORLD — RPM

FOR SALE—LEASING PLANS ALSO AVAILABLE

BAG MACHINERY

1—S&H—F&S—3½" to 10¼" face, 6" to 13" Tube Pull.

BEATERS

2—3000# Downingtown 60" x 67" roll; like new
1—1500# Dilts Breaker Beater; roll 54" x 64" w/75 h.p. motor

CALENDER STACKS

1— 80" P & J 7 roll; heavy duty
2— 82" & 86" Lobdell five roll
1— 96" B-C 6 Roll—heavy duty
1—104" B-C 8 roll
1—115" B-C 7 roll
1—124" Downingtown 5 roll
1—124" Downingtown 6 roll
1—126" Farrell 9 roll—w.c. bearings

CHIPPERS

1— 96" Murray 6 knife; A-F Brng

COATERS

1— 24" Waldron Coater & Embosser
1—60" Egan Air Knife—New 1956.
2— 65" & 76" Mayers

COMPLETE PAPER & BOARD MACHINES

3—Sandy Hill 81" trim single cyl. Tissue
1—M & W 72" Trim Fourdrinier paper machine
1—B-C 100" 7 cyl. Board Machine Complete
1—M & W 72" Trim Yankee Fourdrinier
1—Rice Barton 84" Fourdrinier

CYLINDER MOLDS

1—104" face x 36" dia
8—114" face x 36" dia. w/ rubber couches
8—124" face x 36" dia w/rubber couches

CYLINDER WET ENDS

1—Single cylinder; 99" face x 48" dia.
1—114" 7 cyl. Wet End, complete through main presses
1—124" 7 cyl. Wet End, complete through main presses

DRYERS—HYDROSTATICALLY TESTED

24" Dia.:
39— 46" face; Chrome plated
1—156" face w/gear and steam joint

28" Dia.:
3— 70" face w/gears & bearings
3— 73" face w/gears & bearings
3— 76" face w/gears & bearings
3— 77" face w/gears & bearings
2— 84" face
2— 84" face w/accessories

36" Dia.:
1— 42" face
2— 44" face; 2—46" face
3— 70" face w/gears & bearings
11— 72" face w/gears & bearings
1— 74" face Lukenweld w/A-F Brng
8— 75" face w/gears & bearings
26— 76" face; complete section
9— 76" face w/gears & bearings
2— 77" face w/gears & bearings
1— 78" face w/gears & bearings
2— 80" face
5— 84" face
11— 84" face; complete section
18— 90" face; complete section
9— 92" face; complete section
1— 96" face
1—138" face
10—160" face

42" Dia.:
23— 73; 74; 76" face; complete section
46— 96" face w/gears, frames & bearings
1—120" face
1—160" face

48" Dia:
49— 46" face; chrome plated
12— 82" face; complete section
3—84" face
21—106" face w/gears & bearings
2—110" face w/gears & bearings
10—123" face w/gears, frames & bearings
1—128" face

DRIVES—ENCLOSED RIGHT ANGLE

1—Beloit 65 h.p. Ratio 2.88 to 1
3—Jones 65 h.p. Ratio 4.83 to 1
1—Michigan 92½ h.p. ratio 10.1 to 1
1—Phila. 28 h.p. Ratio 10.56 to 1
1—50 h.p. Reliance VS with MG set & controls
1—Cleveland 47 h.p.—ratio 3 5/9 to 1
1—Cleveland 23.5 h.p.—ratio 3 5/9 to 1
2—Falk 50 h.p. Ratio 3.529-1
3—Beloit 75 h.p. Ratio 3, 4 & 4.6875 to 1

EMBOSSERS

1— 80" Hudson Sharp; A-F Brng
2— 62" Textile Machinery Co., w/drives

EXTRACTOR ROLLS—DOWNINGTOWN

1—128" face x 24" dia.—complete section

FELT CONDITIONERS—VICKERY

1—New Bird—218" Max. cleaning area
1—New Bird—166" Max. cleaning area

FELT GUIDE

1—New Nash Wet Felt Guide. Style 535RH

FLAT SCREENS

1— 4 plate Tailing Screen
2— 12 plate IMPCO w/Dunbar Drives
8— 14 plate IMPCO—Bronze Vats S.S. Plates

"HYDRAPULPER"

1—Dilts 16 ft. Batch type complete w/125 h.p. motor

INLETS & HEADBOXES

1—106" Valley w/8" distributing roll
1—131" Valley w/10" distributing roll; SS lined
1—131" Beloit Pressure Type; SS rolls—1100 f.p.m. S. S. Construction

JORDANS

2—Appleton #1 w/A-F Brng
1—Horne w/A-F Brngs
4—Shartle Miami #2 w/A-F Brngs
1—Jones Midget—Used 2 months

MOTORS 3 PH 60 CYCLE

1—100 h.p. GE; 440 v; 695 r.p.m.
1—250 h.p. West. syn. 440V., 450 r.p.m.
1—300 h.p. West; 2200 v; 503 r.p.m.
1—350 h.p. GE; 2200 v; 720 r.p.m.; Synch

PAPER MACHINE DRIVES

1—De Laval 100 h.p. steam turbine w/reducers

PULP MILL EQUIPMENT

1—Lannoye #1 Pulper
1—Murray 2 deck Chip Screen, 5 ft x 14 ft.

PUMPS—OPEN IMPELLER

47—Centrifugal Stock and Water Pumps
1—Shartle 7 x 16 Triplex.
1—Shartle 8 x 18 Duplex.

REELS

1—100" Kohler automatic two arm unwind reel; 60" dia rolls; new condition
1—109" two bowl upright
1—123" Beloit—2 bowl
1—126" Beloit Aldrich surface drive type
1—146" B & S pope type w/Reliance drive

REFINERS

2—#1 Claffin; A-F Brng
1—24" Downingtown Weiner; new
1—36" Bauer, Model 185 w/2—75 h.p. motors
1—Dilts #4 Hydrafiner
1—Dilts 36" Classifiners AF Brng.
1—Claflin #2—New fillings AF Brng.

ROLL GRINDERS

1—124" x 30" Farrel w/crowning device
1—208" x 32" Farrel w/crowning device

ROLLS

Distributor—Stainless Steel
2— 8" dia x 115" face
1— 6½" dia x 115" face

Couch—Rubber Covered
20 Misc. Sizes Dwngs Available

Press—Rubber or Brass Covered
71 Miscellaneous sizes. Drawings available

Felt—Steel, Brass, Rubber Covered
335 Miscellaneous sizes. Drawings available

Calender—Chilled Iron
72 Miscellaneous sizes. Drawings available

ROTARY SCREENS

5—Bird #3A, Model 100 w/copper vats
1—Jones Leithwalk copper lined
2—24" Shartle Selectifiers w/motor.

SHEETERS—WITH BACKSTANDS

1— 45" Beck w/Jogger
1— 50" Finley
6— 56", 60", 66" & 70" Hamblets
1— 65" Kidder w/elec. eye and layboy
1— 76" Beloit Duplex
1— 82" Hamblet
1— 85" Hamblet duplex w/layboy
1—105" Hamblet
1—112" Beloit Duplex Board Cutter; A-F Brng

SLITTERS & REWINDERS

17¾" Maximum Rewind Diameter
2— 42" Cameron Type 26-2A

24" Maximum Rewind Diameter
2— 42" Cameron Type 6
1— 42" Cameron Type 6 Shear Cut
1— 62" Cameron Type 8
1— 72" Cameron Type 9-5

30" Maximum Rewind Diameter
1— 60" Langston Shear Cut
1— 72" Cameron Type 10; A-F Brng
1— 72" Cameron Type 10 Shear Cut; A-F

36" Maximum Rewind Diameter
1— 70" Variable Speed Center Winder
1— 62" Cameron 8-10
1— 72" Cameron Model 8-10
1— 82" Cameron 10-11; A.F. Brng.

42" Maximum Rewind Diameter
1— 40" Egan Shear Cut; A-F Brng
1— 60" Kidder Model SH Low Bed
1— 72" Beloit Shear Cut
1—136" Cameron Type 18; A-F Brng
1—161" Cameron Type 18 w/60 h.p. Reliance VS Drive

48" Maximum Rewind Diameter
1— 86" M & W Four Drum Shear Cut
1—152" Langston Shear Cut

60" Maximum Rewind Diameter
1—112" Cameron Type 18
1—120" M & W two drum w/75 h.p. drive
1—120" Langston
1—136" Langston; AF Brng; shear cut

SLITTERS & REWINDERS—DOUBLE REWIND

18" Maximum Rewind Diameter
1— 42" Cameron 26-7D for Cellophane
1— 52" Cameron Type 26-3A

30" Maximum Rewind Diameter
1— 42" Essex Shear Cut; A-F Brng

STOCK CLEANERS

2—1000 g.p.m. Shartle Hydrafuges w/motors
14—Bird Dirtecs; 2" & 6" bronze
1—Bird Dirtec 12". Rebuilt by Bird
21—4" Vortraps—Bronze

STOCK REGULATORS

2—Braemer SS; 25 t/d cap; Foxboro controls
2—Poirier; 25T /D cap

SUCTION COUCH ROLLS

1—125" face x 18" dia—bronze brng
1—144" face x 30" dia—roller brng

SUCTION EXTRACTOR ROLLS—DOWNINGTOWN

1—105" face x 19" dia
1—126" face x 22" dia; complete section
1—134" face x 18" dia.; A-F Brng

SUCTION PRESS SECTIONS

1—114" face x 20¼" dia. R. C. Complete section
1—120" face x 18" dia—R.C.—Roller brng
1—126" face x 24" dia. R.C.; A-F Brngs; new 1951

SUPERCALENDERS

2— 30" Norwood 4 roll
2— 63" Norwood 8 roll; A-F Brng
1— 92" Norwood 7 roll w/drive
1— 53" Norwood, 13 roll, glassine; A-F Brngs

TOWEL & NAPKIN FOLDERS

1—Hudson Sharp 50", single fold—towel
2—Paper Converting ¼ fold—napkin
1—Paper Converting single fold—towel

THICKENERS

1—Shartle—Cylinder 131" x 36"—16" R.C. Couches
1—Shartle—Cylinder 36" dia. x 72" face.

TRIMMERS—POWER BACK GAUGES

1— 50" Seybold Twentieth Century
1— 57" Seybold Precision
2— 65", 84" Seybold Daytons

UNWIND STANDS—CONSTANT TENSION

1— 34" Cameron Type CT—Electric Eye
1— 72" Cameron—water cooled brake
1— 82" Cameron—water cooled brake

VACUUM PUMPS

8—H-4, ¼H-5, & H-5 Nash
2—L-5 & L-7 Nash
5—#2, #4, & #7 Nash Hytors
1—8 x 10 Connersville
3—MD-2 Nash w/motors; new laboratory models

YANKEE DRYERS

1—132" face x 10' dia Beloit; 35 psi

Help Wanted

WANTED

Engineer for Sales Work at Midwest Headquarters

of one of the best known manufacturers of a product that is used on most all pulp and paper mill machinery.

Require engineering graduate with some paper mill engineering or maintenance experience.

Age 30 to 35, preferably married—not a requisite.

A real opportunity for the right man.

Address box 61-50, Care of PAPER TRADE JOURNAL M-27

Medium sized Southern Berkshire paper mill requires a staff electrical engineer with 5 to 7 years general electrical maintenance, design and instrumentation experience. Please send resume and salary requirements to Box 61-42, care Paper Trade Journal.

M-20

Immediate position open for Graduate Mechanical Engineer. Prefer man experienced in paper or paper converting. Will accept candidate with machine design experience. Send resume, salary requirements to Rochester Paper Company, Rochester, Michigan. TF

Situations Wanted

Production executive — conversion of boards, paper & film. Well versed in heading up all production functions in an organization; or reorganization deal. Multiple manufacturing units. Employed — wishes change for challenging opportunity. Box No. 61-9 care Paper Trade Journal. M-27

Finishing—Shipping—Supervisor

Diversified experience in paper and board. Strong in administrative ability. Wishes change to improve position in same or related capacity. Is intelligent, has initiative and ability. Write Box 61-38 care of Paper Trade Journal. M-6

Retired executive, 65, wide knowledge of paper, paperboard and wallboard plants. Successful record managing engineering, sales and manufacturing. Seeks management, consulting or engineering position. For further details write c/o Box No. 61-31 Paper Trade Journal. M-8

SUPERINTENDENT — Middle aged Practical Paper Maker, 9 years in supervision. Wide experience on Kraft, board, fine papers. Employed—looking for change for advancement. Address Box 61-43 care Paper Trade Journal. M-13

Help Wanted

Situations Wanted

MASTER MECHANIC — Engineering school background; experienced in Fourdrinier and Cylinder machines; now employed; excellent references. Address Box 61-47 care Paper Trade Journal. M-13

For Sale

FOR SALE

Well Established Paper Mill.

Specializes in Napkins.

Operates at profit with excellent list of customers and fine operating staff.

Strong Balance Sheet Position

For Particulars apply

Box 61-49 Paper Trade Journal

M-6

FOR SALE
LOW PRICES

2—86" B. & S. Wet Machines; Bronze and Rubber Press Rolls; A.F. Bearings on Couches and Cylinder Molds. Complete with Gear Drives. Excellent Condition.

RUDERMAN MACHINERY EXCHANGE
Gouverneur, New York
Phone 333-334

TF

FOR SALE
96" HAMBLET DUPLEX SHEETER
with automatic lay-boy, 4 roll back stand.—Reasonable.

American Graphic Arts Machinery Co., Inc.
229 Varick St., N.Y. 14, N.Y. OR 5-5777

M-6

Wanted

WANTED

1—72" Pope Type Reel
1—72" Shear cut rewind slitter, with 42 to 48" roll diameter
1—5A Bird Saveall.

Address Box 61-46, care Paper Trade Journal. M-20

Modern Methods of Mechanical Pulp Manufacture

This book comprehensively covers all aspects of groundwood pulp production. The author, K. H. Klemm, has a broad knowledge of groundwood manufacturing methods and has been associated with groundwood mills on both sides of the Atlantic. Price: $5.00.

CONTENTS

The Raw Material: Wood

Heterogeneity of Wood 8
Effect of Pulpwood Quality 17
Pulpwood Transportation to the Mill and Wood Storage Methods 27
Wood Handling Within the Mill 33
Removing the Bark from Pulpwood 38
Barking Methods and Bark Disposal 45
Modern Woodyard Systems 56

The Groundwood Mill

Theoretical Aspects of Production 63
Factors Influencing Grinder Capacity 71
Modern Grinder Types 75
Stones and Stone Handling 87
Grinder Drives and Governors 97
Coarse Screening and Rejects Recovery ... 102
Grinder Room Arrangement 106
Mill Manpower Requirements 108
Problems of Groundwood Quality 111
Routine Testing and Control Methods 114
Instrumentation in a Groundwood Mill ... 121
Grinder Control 125
Control and Record Keeping 138

Groundwood Stock Preparation

White Water Systems 144
Screening Methods and Principles 151
Modern Equipment for Screening 174
Theoretical Considerations of Screening Systems 183
Thickening 190
Bleaching 202
Stock Chest and Storage Systems 212
Fraction Mixing Process 217
Groundwood from Steamed Wood Blocks .. 220
Chemical Treatment Processes 223
Mechanical Pulp from Disk Refiners 229
Comparison of Groundwood Pulps 234

Closing Remarks

Economic Importance, Main Properties, and Uses of Groundwood 237

Lockwood Trade Journal Company, Inc.
49 West 45th Street, New York 36, N. Y.

Rush me post-paid a copy of your book, MODERN METHODS OF MECHANICAL PULP MANUFACTURE at $5.00

☐ Payment Enclosed

Name ..... Title.....

Company .....

Address .....

City..... Zone..... State.....

Buy U. S. Savings Bonds

PRACTICAL PAPER TECHNOLOGY

by William Bond Wheelwright

This book begins with a survey of "Progress in the Paper Industry" and ends with a list of books recommended for collateral reading. The intermediate chapters are entitled: "How to Judge Paper"; "Physical Aspects of Paper"; "Practical Manual and Visual Tests"; "Essential Facts About Papermaking"; "Coated, Glazed and Specialty Papers"; "Permanence of Paper"; "Paper Difficulties in Converting"; "Paper as a Medium for Printing"; "Letterpress Printing"; "Offset Lithography"; "Intaglio Processes."

Also a Supplement containing a Quiz Test on paper.

LOCKWOOD TRADE JOURNAL CO., Inc.
49 West 45th Street, New York 36, N. Y.

Send postage prepaid, Remittance with order.....copies.
Paper Technology, Price $1.75; Foreign Delivery—25c extra.
All New York City Orders are Subject to a City Sales Tax

Name .....

Street .....*City and State*.....

....., 19.....*Ordered by* .....

BIG TANKS ...or small

quality-built to specifications

Kalamazoo WOOD TANKS

Engineering experience, craftsmanship, selected top-grade tank lumber . . . your guarantee of satisfaction. For large tanks or small, see *Kalamazoo* first. Free estimates and suggestions.

WOOD TANK DIVISION

Kalamazoo TANK and SILO CO. 858 HARRISON STREET KALAMAZOO, MICH.

Another Plant To Serve You

SHIP US IN KALAMAZOO

PACKING PLANTS
CHICAGO, ILL.
WASHINGTON, D. C.
CAMDEN, N. J.
KALAMAZOO, MICH.
LOUISVILLE, KY.

THOMAS PAPER STOCK CO.
1500 N. Hooker St. MO-4-5700 Chicago 22, Ill.

The First Complete Book In Its Field...

PULP AND PAPER MILL INSTRUMENTATION

By filling in and mailing the handy coupon today, you will be among the very first to benefit by this practical hard-bound volume.

In 117 large 7" x 10" pages, with dozens of charts, diagrams and tables, PULP AND PAPER MILL INSTRUMENTATION brings you full details on instruments for your mill, their selection, their use, and their maintenance.

Contents Include:

Measurement of Process Variables
Principles of Automatic Control
Kamyr Continuous Kraft Pulping
High Yield Sulphite Pulping
Chemi-Groundwood Mill
Automatic Reduction and Handling of Instrument Data
Paper and Board Mills
Kraft Pulp Mills
Sulphite Pulp Mills
Continuous Semi-Chemical Pulping
... and much more!

Be sure you get a first edition copy of this practical volume by E. J. Cole and M. Todd. Add PULP AND PAPER MILL INSTRUMENTATION to your bookshelf today.

LOCKWOOD TRADE JOURNAL COMPANY, INC.
49 West 45th Street, New York 36, N. Y.

Yes, rush me post-paid a First Edition copy of your book, PULP AND PAPER MILL INSTRUMENTATION at $3.50.

☐ Payment Enclosed

Name .....Title.....

Company .....

Address .....

City .....Zone....State.....

ADVERTISERS

Acme Steel Company ..... —
Air Reduction Chem. Co. ..... —
Air Reduction Sales Co. ..... —
Aktiebolaget Kamyr ..... —
Albany Felt Co. .....50C & 50D
Alginates Industries, Ltd. ..... —
Allied Chem. Corp., Nitrogen Div. ..... —
Allis Chalmers Mfg. Co. ..... —
American Bitumuls & Asphalt Co. ..... —
American Bridge Div., U. S. Steel Corp. ..... —
American Cyanamid Co.
Paper Chemical Div. ..... —
Dyes Dept. ..... —
Organic Chem. Div. ..... —
Pigment Div. ..... —
American Defibrator Co. ..... —
American S. F. Products 46
American Steel & Wire Co. ... —
American Viscose Corp. ..... —
Ames Company Inc. ..... —
Anglo American Clays Corp. .. 61
Anglo-Canadian Pulp & Paper Mills ..... —
Anglo Paper Products Ltd. ... —
Antara Chemicals, Sales Div. Gen. Aniline & Film Corp. . —
Apmew, Inc. ..... —
Appleton Machine Co. ..... —
Appleton Wire Works ..... —
Armco Drainage & Metal Prod. Co. ..... —
Armco Steel Corp. .....54 & 55
Arnold Hoffman & Co. ..... —
Asten-Hill Mfg. Co. ..... —
Ateliers de Constructions Allimond ..... —
Atlantic Coast Line R. R. .... —
Babcock & Wilcox Co. ..... —
Bahr Brothers Mfg. Co. 61
Bailey Meter Co. ..... —
Bauer Bros. Co. 56
Becco Chem. Div. Food Machy. Corp. ..... —
Beloit-Eastern Corp. ..... —
Beloit Iron Works Co. ..18A & 18B
B. I. F. Industries 60
Binet, Louis et Cie ..... —
Bird Machine Co. 25
Bixby, R. W. Inc. ..... —
Black-Clawson Co. ..... —
Bolton & Sons 3
Brandon Sales, Inc. ..... —
Broughton, A. E. & Co. ..... —
Brown Company ..... —
Bruderhaus (Maschinenfabrik Zum) ..... —
Buckeye Cellulose Corp. ..48 & 49
Buffalo Forge Co. ..... —
Buffalo Pumps ..... —
Butterworth, H. W. & Sons Co. —
Cady, E. J. & Co. ..... —
Cadillac Associates Inc. ..... —
Cameron Machine Co. ..... —
Carthage Machine Co. ..... —
Celgar Ltd. ..... —
Cellulose Development Corp. .. —
Central Soya Co. ..... —
Cesalpina S.P.A. ..... —
Chemico ..... —
Chromium Corp. of America .. —
Ciba Company ..... —
Cincinnati Rubber Mfg. Co. .. —
Clark-Aiken Company ..... —
Classified Advertising 62
Cleveland Crane & Engrg. 20
Columbia-Geneva Steel Div., U. S. Steel Corp. ..... —
Combustion Engrg. Co. ..... —
Corn Products Sales Co. ..... —
Crane Company .....52 & 53
Curtiss-Wright Corp. ..... —
Davis, Frank H., Co. Inc. .. —
Defibrator A. B. ..... —
DeZurik Corporation ..... —
Diamond Alkali Co. ..... —
Dobeckmun Company ..... —
Dodge Mfg. Co. ..... —
Dorries, O., A. G. ..... —
Dorr-Oliver ..... —
Dow Chemical Co. ..... —
Dow Industrial Service Div. Dow Chemical Co. ..... —
Doyle, J. E., Co. ..... —
Draper Bros. Co. 27
Dryden Paper Co., Ltd. ..... —
du Pont, E. I. de Nemours & Co., Dyes & Chem. Dept. ... —
Electrochemical Dept. ..... —
Industrial & Biochem. Dept. —
Pigments Dept. ..... —
Duverre Inc. ..... —
Eaton Manufacturing Co. ..... —
Ebasco Services, Inc. ..... —
Economy Equipment Co. ..... —
Egan, Frank W., & Co. 6
Egger, Emile & Co. ..... —
Electric Mchy. Mfg. Co. ..... —
Elixman Paper Core Co. ..... —
Escher Wyss G.m.b.H. ..... —
Evans, W. P. & Son, Ltd. ..... —
Export Supplement ..... —
Fabri Valve Co. of America .. 47
Farrel-Birmingham Co. ..... —
Fibre Making Processes Inc. .. —
Finckh, Herman ..... —
Fitchburg Screen Plate Co. ... —
Food Mchy. & Chem. Sales Dept., Chemicals & Plastics Div. ..... —
Food Mchy. & Chem. Corp. Chlor-Alkali Div. ..... —
Foxboro Co. ..... —
Freeport Sulphur Co. ..... —
Garlock, Inc. ..... —
Gaspesia Sulphite Co. Ltd. ... —
Gates Rubber Co. ..... —
Geigy Chemicals Corp., Geigy Dyestuffs Co. ..... —
General Dyestuffs Co. ..... —
General Tire & Rubber Co. ... —
Gibbs-Brower Co. 62
Gilbert & Nash Co. ..... —
Glidden Company 18C
Goodyear International Corp. . —
Goodyear Tire and Rubber Co. ..... —
Gottesman-Central National Org. .....Front Cover
Goulds Pumps ..... —
Great Lakes Carbon Corp., Dicalite Dept. .....Back Cover
Green, Inc., Frank B. ..... —
Greening & Sons, Ltd. ..... —
Grinnell Co., The ..... —
Hamblet Machine Co. ..... —
Harbison Walker Refactories .. —
Hardinge Company, Inc. ..... —
Harland Eng. Ltd. ..... —
Harris-Seybold ..... —
Hayssen Mfg. Company ..... —
Heimbach, Thomas J. ..... —
Hercules Powder Co. 18
Hooker Chemical Co. ..... —
Huber, J. M. Corp. ..... —
Hudson Sharp Machine Co. ... —
Hungerford & Terry, Inc. ..... —
Hunt, Rodney ..... —
Hunt & Moscrop ..... —
Huyck Felt Company 56
Hyster Company .....14 & 15
Improved Machinery, Inc. .... —
Ingersoll-Rand Co. ..... —
Inglis, John, Co. ..... —
Industriplanering ..... —
Jagenberg U.S.A., Inc. ..... —
Jagenberg Werke ..... —
Jamesbury Corp. ..... —
Jenkins Brothers ..... —
Johns-Manville Corp. ..... —
Johnson, Alvin H., Co. ..... —
Johnson Corp., The ..... —
Jola, G.m.b.H. ..... —
Jones, E. D., Corp. ..... —
Kalamazoo Tank & Silo Co. .. 65
Kamyr, Inc. ..... —
Karlstads Mekaniska Werkstad —
Kellogg, M. W. Company ..... —
Kenyon, James & Son ..... —
Kidder Press Co. ..... —
Knox Woolen Co. 61
Koppers Co., Inc. ..... —
Lamb-Grays Harbor Co. ..... —
Lamont Fils ..... —
Langston, Samuel Co. ..... —
La Papeterie ..... —
Laporte Titanium Ltd. ..... —
Lawson Company ..... —
Layton-Greenfield Inc. ..... —
Lestoil, Inc. ..... —
L'Homargy ..... —
Link-Belt Co. ..... —
Lob, Albert Maschinen und Apparatebau ..... —
Lockport Felt Co. ..... —
Lockwood Greene Engineers .. —
Lodding Engineering Co. .... —
Lunkenheimer Co. .. .. —
Lyddon & Co. ..... —
Main, Charles T., Inc. 50
Manchester Machine Co. ..... —
Marathon—A Division of American Can ..... —
McLean, Ltd. ..... —
Mead Pulp Sales, Inc. ..... —
Meeke, Klaus, & Co. ..... —
Miehle-Goss-Dexter ..... —
Miller Corp., Harry ..... —
Millspaugh, Ltd. ..... —
Mine and Smelter Supply Co. . —
Minerals & Chem. Philipp Corp. ..... —
Minneapolis-Honeywell ..... —
Mixing Equipment Co. ..... —
Monsanto Chemical Co. ..... —
Montague Mch. Co. ..... —
Montmorency Paper Co. Inc. .. —
Moore & White ..... —
Morden Machines Co. ..... —
Mt. Vernon Mills, Inc. ..... —
Multi Metal Wire Cloth Co. .. 28
Murray, D. J., Mfg. Co. ..... —
Nalco Chemical Co. ..... —
Nash Engineering Co. ..... —
National Aniline Div., Allied Chem. Corp. ..50A & 50B
National Starch & Chemical Corp. 11
National Tube Div., U. S. Steel Inc. ..... —
Newport News Shipbldg. & Dry Dock Co. ..... —
New Jersey Zinc Co. 57
Nichols Eng. & Research Corp. ..... —
Nopco Chemical Co. 2
Norton Co. ..... —
Oakite Products Inc. ..... —
Olin Mathieson ..... —
Osborne Paper Mill Equip. Co. —
Overly's Inc. ..... —
Paper Conv. Mch. Co. 16
Parsons & Whittemore ..... —
Patton Mfg. Co. ..... —
Penick & Ford 7
Penn. Ind. Chem. Corp. ..... —
Penobscot Chemical Fibre Co. . —
Pennsalt Chem. Corp. ..... —
Perkins Goodwin Co. ..... —
Pfaudler Permutit Inc., Permutit Div. 51
Pioneer Paper Stock Co. ..... —
Pittsburgh Plate Glass Co., Chem. Div. ..... —
Potdevin Machine Co. ..... —
Powell Valves 9
Price & Pierce, Ltd. 61
Puget Sound Pulp & Timber 17
Raymond, Charles P., Service —
Rayonier, Inc. 59
RCA Industrial Electron. Prod. 12
Record Fdy. & Mch. Co. .... —
Rex Ray Mfg. Co. ..... —
Reichhold Chemicals ..... —
Rhoads, J. E., & Sons ..... —
Rice Barton Corp. ..... —
Riedel, Gus & Son ..... —
Riegel Paper Corp. ..... —
Robbins Instrument Co. ..... —
Rockwood Sprinkler Co. ..... —
Rohm & Haas Co. 8
Ronningen-Petter Co. ..... —
Roosevelt Paper Co. ..... —
Ross, J. J. Co. ..... —
Ross, J. O., Engrg. Co. ..... —
Ross Midwest Fulton Corp. .. —
Ross Paper Machinery Co. 63
Ruderman Machinery Service .. 64
Rust Engineering Co. ..... —
Ryerson, Jos. T., & Son ..... —
Sandoz Chem. Wks. ..... —
Sandy Hill Iron & Brass Wks. —
Scapa Dryers Inc. ..... —
Seaboard Air Line R. R. Co. . —
Shawinigan Resins Corp. 13
Sheffield Corp. ..... —
Shuler & Benninghofen ..... —
Signode Steel Strapping Co. ..... —
Sinclair Company ..... —
Sirrine, J. E., Co. ..... —
SKF Industries ..... —
Smidth, F. L., & Co. ..... —
Smith & Winchester Mfg. Co. . —
Sonoco Products Co. ..... —
Southworth Machine Co. .... —
Spraying Systems Co. ..... —
Sprout Waldron & Co. ..... —
Stadler Hurter & Co. 50
Staley Mfg. Company ..... —
Starch Products, Ltd. ..... —
Stebbins Engrg. Co. ..... —
Stein, Hall & Co. ..... —
Steinen, Wm., Mfg. Co. ..... —
Stephens-Adamson Mfg. Co. .. —
Stevens, Inc., Charles R. .... —
Stone & Webster Eng. Corp. .. —
Stowe-Woodward, Inc. ..... —
St. Regis Paper Co., Kraft Div. ..... —
St. Regis Paper Co., Panelyte Div. ..... —
Sturge Ltd., John & E. ..... —
Sulzer Brothers ..... —
Sunday, George M., Assoc. ... 62
Taylor Instrument Co.'s ..... —
Taylor-Wharton Company .... —
Tennessee Coal & Iron Co. ... —
Tennessee Corp. ..... —
Texaco, Inc. ..... —
Texas Gulf Sulphur ..... —
Thermal Equipt. Corp. ..... —
Thiele Kaolin Co. ..... —
Thiry & Company ..... —
Thomas Paper Stock Co. 65
Titanium Pigment Corp. ..Cover 3
Torrington Co. ..... —
Tyler Rubber Company ..... —
United Engrg. & Fdy. Co. .... —
Universal Metal Hose Co. .... —
U. S. Industrial Chem. Co. Div. of National Distillers & Chem. Corp. ..... —
U. S. Steel Corp. ..... —
United States Steel Export .. —
United States Steel Supply Co. —
Valley Iron Works ..... —
Vanderbilt, R. T., Co. ..... —
Vapor Systems Co. ..... —
Virginia Smelting Co. ..... —
Voith, J. M., G.m.b.H. ..... —
Waldron-Hartig Div., Midland Ross Corp. ..... —
Wallingford Steel Co. ..... —
Walworth Co. ..... —
West End Chemical Div., Stauffer Chem. Co. ..... —
West Va. Pulp & Paper Co. .. 10
Weverhaeuser Co. ..... —
Williams-Gray Co. 61
Wisconsin Wire Works ..... —
Witco Chemical Co. ..... —
Woodpulp, Inc. ..... —
Wyandotte Chem. Corp. ..... —

While we strive for accuracy in preparing the above index which is purely a service to our readers, we cannot be responsible for errors.

PAPER TRADE JOURNAL

BUSINESS STAFF

Arthur E. Gordon, Business Mgr.

Francis J. Gordon — Alrick Man

Edward H. Hall — Pittsburgh-Cleveland Area

New York 36, N. Y. 49 W. 45th St. Plaza 7-2370

Cable: "Lockmin"

CHICAGO 3, ILL.: H. K. Vinton
79 W. Monroe St. CEntral 6-2784

MIAMI 38, FLA.: Hal Moore
279 N. E. 79th Street. PLaza 8-5516

Rep. by McDonald-Thompson in:

LOS ANGELES 5, CAL.: R. Teeter
3727 W. Sixth St., DUnkirk 7-5391

SAN FRANCISCO CAL.: Cal Wood
625 Market St. EXbrook 7-5377

DENVER 3 COLO.: Bob Heidersbach
620 Sherman Street. TAbor 5-3325

PORTLAND 1, ORE.: Francis M. Eaton
2035 S.W. 58th Ave., CA 2-5146

DALLAS 19 TEXAS: Parker Harris
2727 Oak Lawn Ave., LAkeside 1-1266

HOUSTON 6, TEXAS: F. Vickrey
Room 214, 3217 Montrose Blvd. JAckson 9-6711

SEATTLE 4, WASH.: H. Abney
1008 Western Ave. MA 3-3766

Frederick B. Grosse, Production Mgr

New York 36, N. Y. 49 W. 45th St. Plaza 7-2370

Cable: "Lockmin"

Foreign Representatives

EUROPE except U.K. & Germany
John Ashcraft
67 Avenue des Champs Elysees, Paris, 8.

GERMANY
Herbert Morgenbesser
Kohlgarten, 3, Hamburg-FU. Phone 59-82-03.

TOKYO, JAPAN
George C. Olcott, Business Manager
International Media Representatives Ltd.,
Shagan Hoiin, 14.2—Chome Marunouchi.

UNITED KINGDOM
John Eckford-Prossor,
Stafford House, Norfolk St., Strand, London W.C.2
Phone TEmple Bar 7397.

HUGHES PRINTING CO.
EAST STROUDSBURG, PA.

Let TITANOX-A-CG
help make sales through the mails

The eagerly awaited catalog can be a star salesman, especially when well known TITANOX titanium dioxide pigment has boosted the brightness and opacity of its pages while keeping weight down. And for outstanding pages that require coated stock there is new TITANOX-A-CG.

TITANOX-A-CG is the coating grade anatase titanium dioxide pigment so well suited to the high solids, high speed coatings applied by all modern coating methods including the trailing blade coater. This pigment is equally suitable to other processes such as size press and calender application.

In addition to high whiteness, brightness and opacity, TITANOX-A-CG readily yields high gloss. This pigment is ideal for the fast, continuous production of paper surfaces of uninterrupted smoothness.

We will be glad to discuss with you the type of TITANOX best suited to solve your white pigmentation problems. Titanium Pigment Corporation, 111 Broadway, New York 6, N. Y.; offices and warehouses in principal cities. In Canada: Canadian Titanium Pigments, Ltd., Montreal.

TITANIUM PIGMENT CORPORATION
SUBSIDIARY OF NATIONAL LEAD COMPANY

TITANOX

DICALITE®

TECHNICAL REPORT

DICALITE DEPARTMENT • GREAT LAKES CARBON CORPORATION • 612 SO. FLOWER ST., LOS ANGELES 17, CALIFORNIA

New Dicalite BULK-AID TRADEMARK for Paper Products

Dicalite BULK-AID is a new development in inorganic fillers, with particle size range and distribution carefully controlled to give maximum bulking characteristics in paperboard and paper products. BULK-AID has the lowest apparent or bulk density of any known mineral filler for papermaking use, thus providing required caliper at lower weights. One example is that of a 40-point groundwood sheet whose weight was reduced from 29.2 lbs/ft³ to 27.3 lbs/ft³ by the addition of 10% BULK-AID.

The light weight and bulking characteristics of BULK-AID make it especially suitable for use in paperboard; its high brightness and excellent retention are also of considerable value. BULK-AID lowers the furnish cost and increases pulp mileage in top liners for patent white paperboards. Its brightness and opacity raise the quality of underliners at the same time it extends the furnish.

Dicalite BULK-AID is an amorphous mineral, technically an aluminum silicate, produced from a volcanic mineral known as perlite by a special process developed by Great Lakes Carbon Corporation. BULK-AID is inert, insoluble in water, acid or mild alkalies. It is grit-free, and exhibits no reaction with alum in sizing or with other papermaking chemicals. It is readily dispersed in any furnish, does not cause foam, and will not fill felts.

Among BULK-AID's physical characteristics are these:

Color: White

Average G.E. Brightness: 83

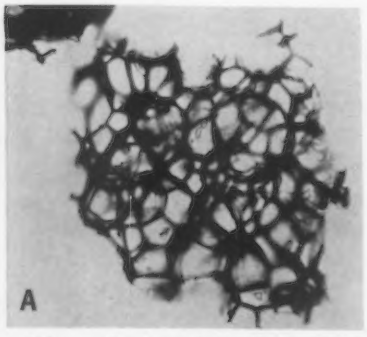
Loose weight: 4½ lbs/ft³ average

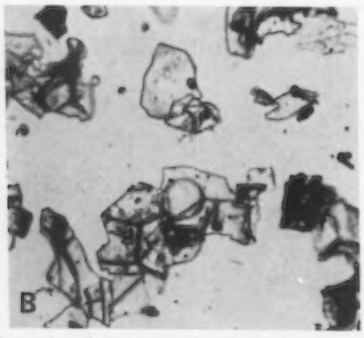
Bulk densities in paperboard: 15 lbs/ft³ average.

Particle size: 80% less than 10 microns

Extensive testing has shown BULK-AID to be successful in actual paper mill production. Most of these tests were on cylinder machines for paperboard production, but limited tests indicate its value in many slow speed fourdrinier applications.

Your Dicalite engineer will be glad to discuss BULK-AID with you and to advise on possible product applications in your own plant.





When perlite is crushed and then suddenly heated to the proper point in its softening range, it pops like corn into particles like that shown in photomicrograph A, containing a myriad of microscopic sealed cells. The size of the original particle and the application of heat are both important, and are critically controlled. This is the expanded material from which BULK-AID is produced. Controlled milling and air classification by an exclusive Great Lakes Carbon Process are the major steps in making BULK-AID, typical particles of which are shown in photomicrograph B.

© 1961 GREAT LAKES CARBON CORPORATION • LOS ANGELES, CALIF.

Gordon G. Halvorsen

DICALITE'S "MAN ON THE SPOT"

The development of Bulk-Aid, to meet the industry's need for an extremely low density bulking agent, was initiated by Gordon Halvorsen, Product Sales Manager for Dicalite, and he has been closely identified with its tests and product application work from the beginning.

Halvorsen has an extensive background in research and development work, beginning with his graduation from the University of Minnesota with a degree in Chemical Engineering. Prior to joining Great Lakes Carbon in 1940, Gordon had been engaged in technical and laboratory work in the pharmaceutical, corn processing and water treatment fields, and continued his research work in the Dicalite product laboratories for the first 5 years of his association.

Halvorsen is the author of several technical papers, and has contributed to both paper industry and brewing publications. Among his technical society memberships he lists TAPPI, American Society of Sugar Beet Technologists, Master Brewers Association of America, and others in the brewing and drycleaning fields.

NEW DATA SHEET

on Dicalite *BULK-AID* gives more complete information on physical and chemical properties, and on its advantages in papermaking. Write for your copy to Dicalite Dept., 612 So. Flower St., Los Angeles 17, Calif.